

FIG. 1

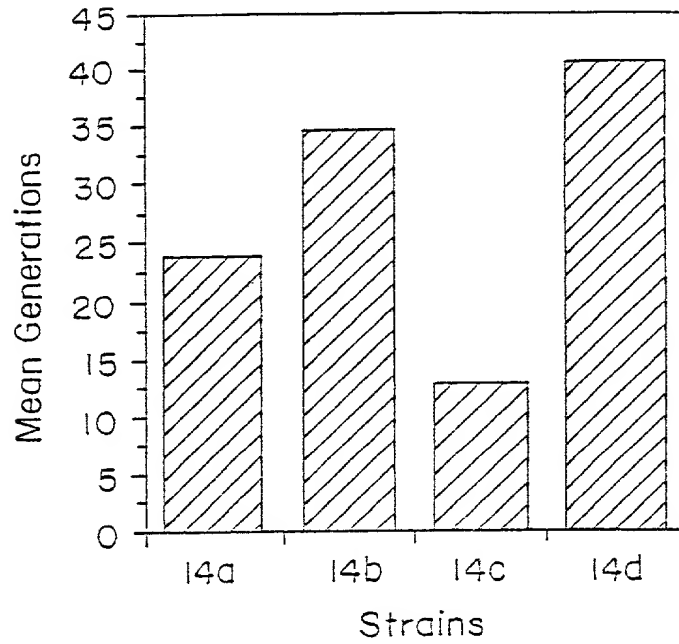


FIG. 2A

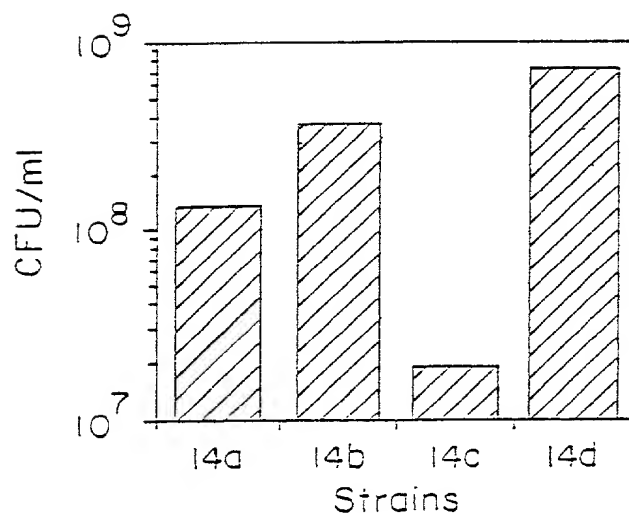


FIG. 2B

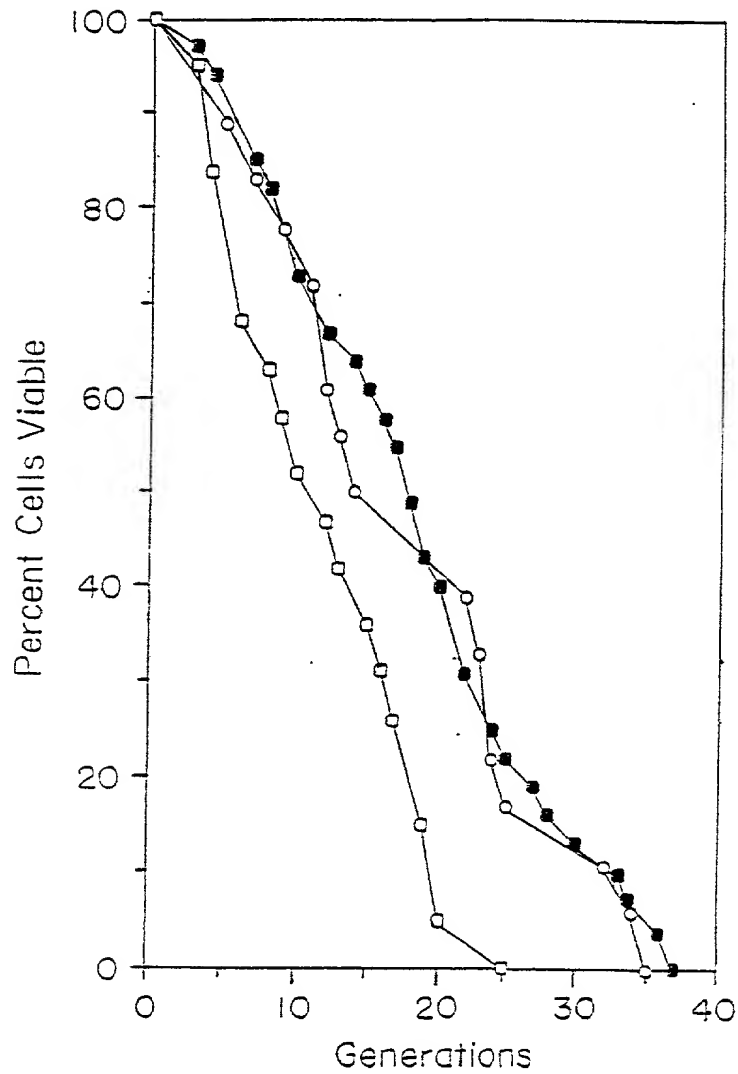


FIG. 3

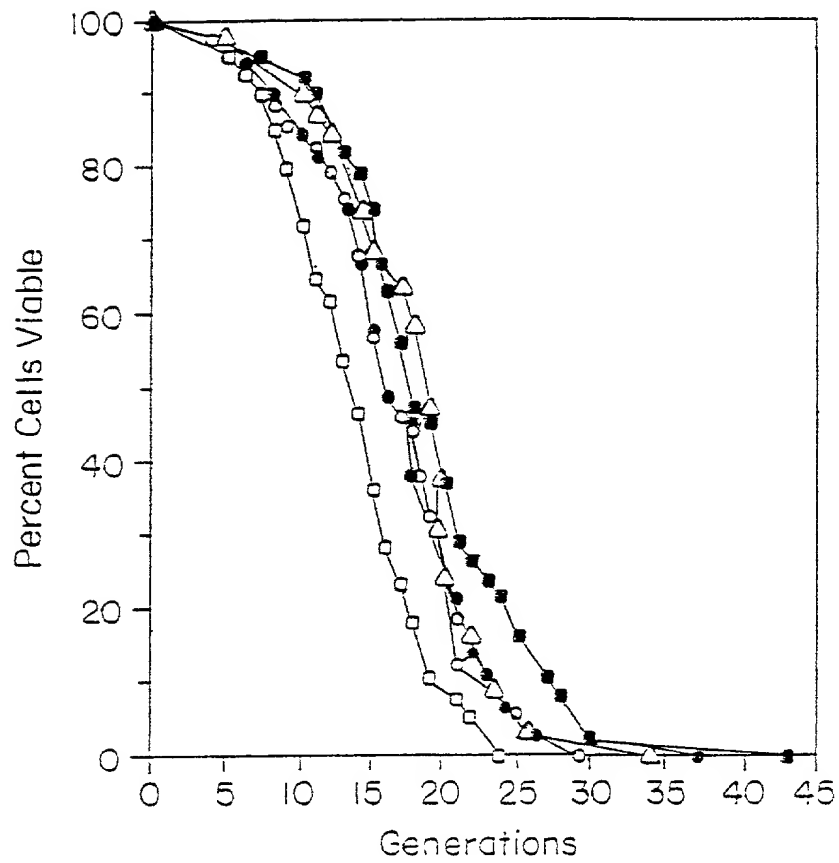


FIG. 4

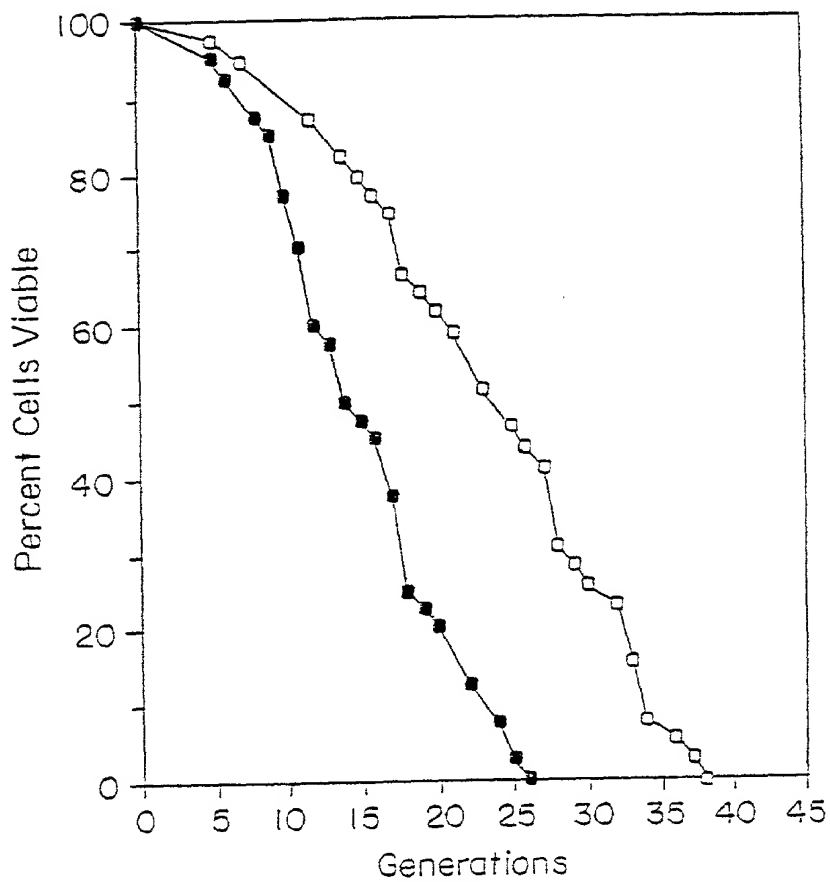


FIG. 5

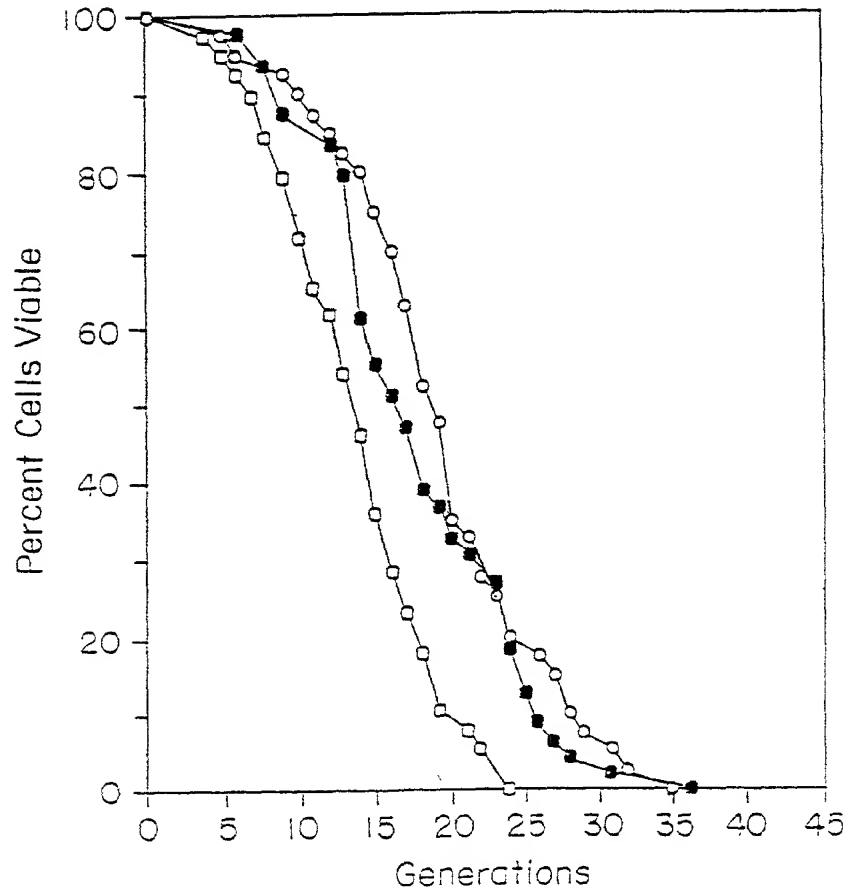


FIG. 6

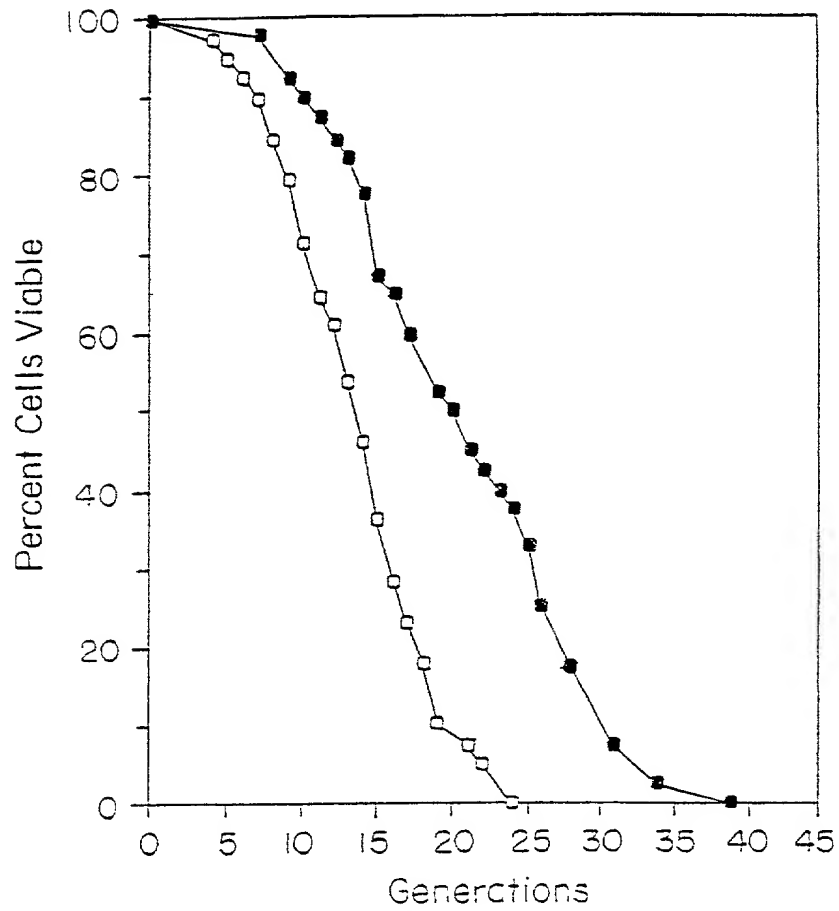


FIG. 7

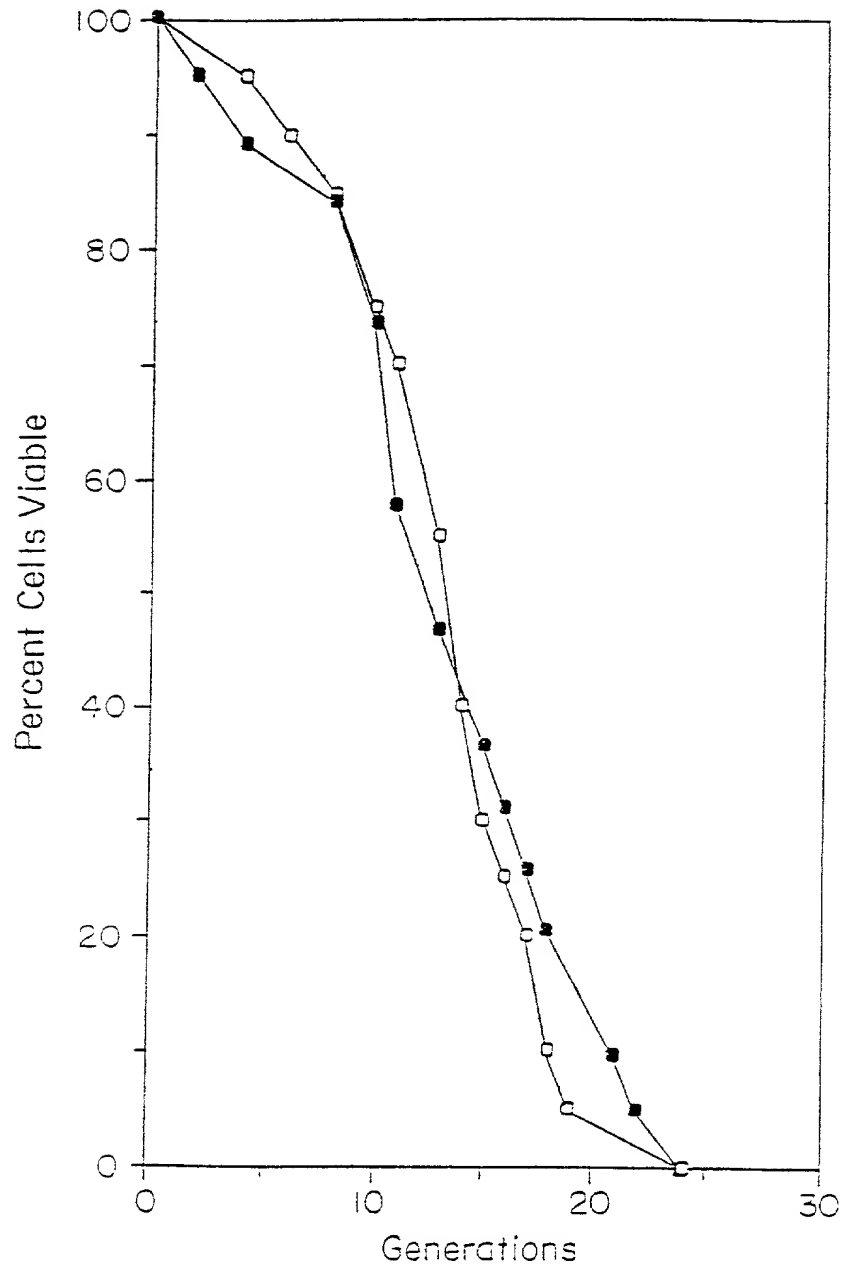


FIG. 8

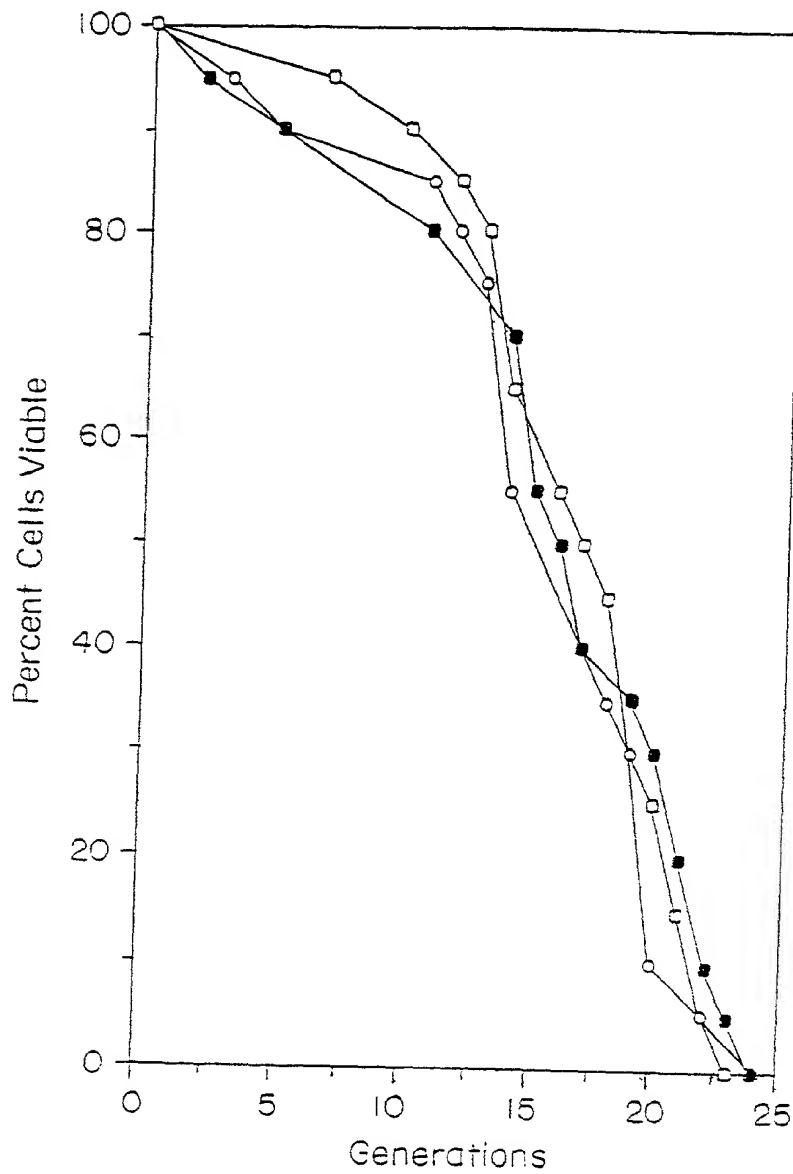


FIG. 9

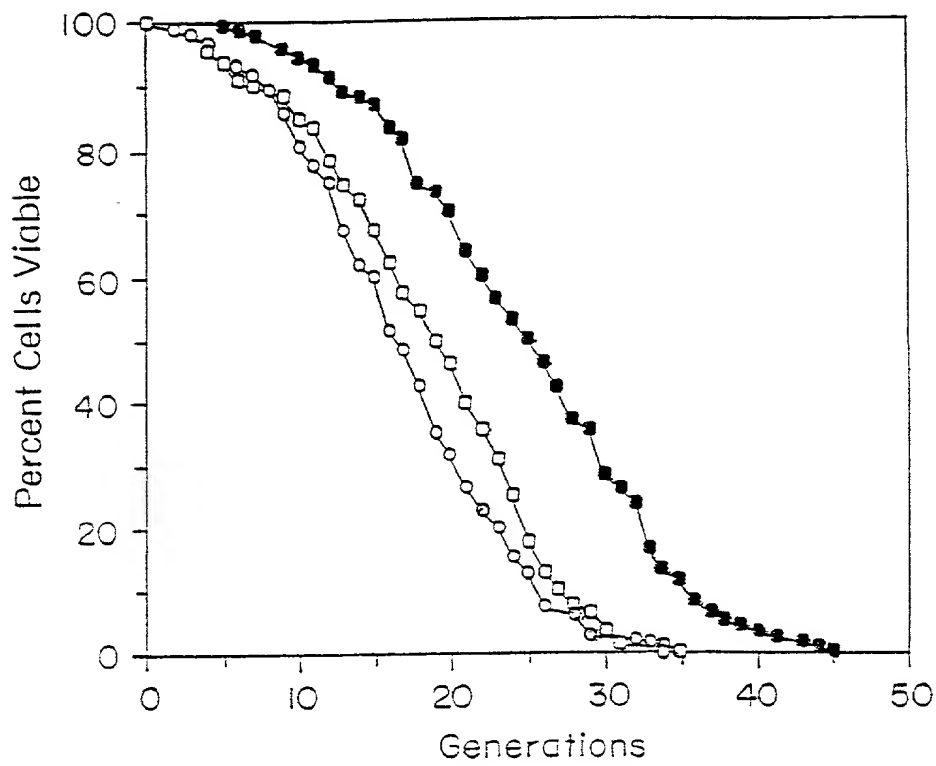


FIG. 10

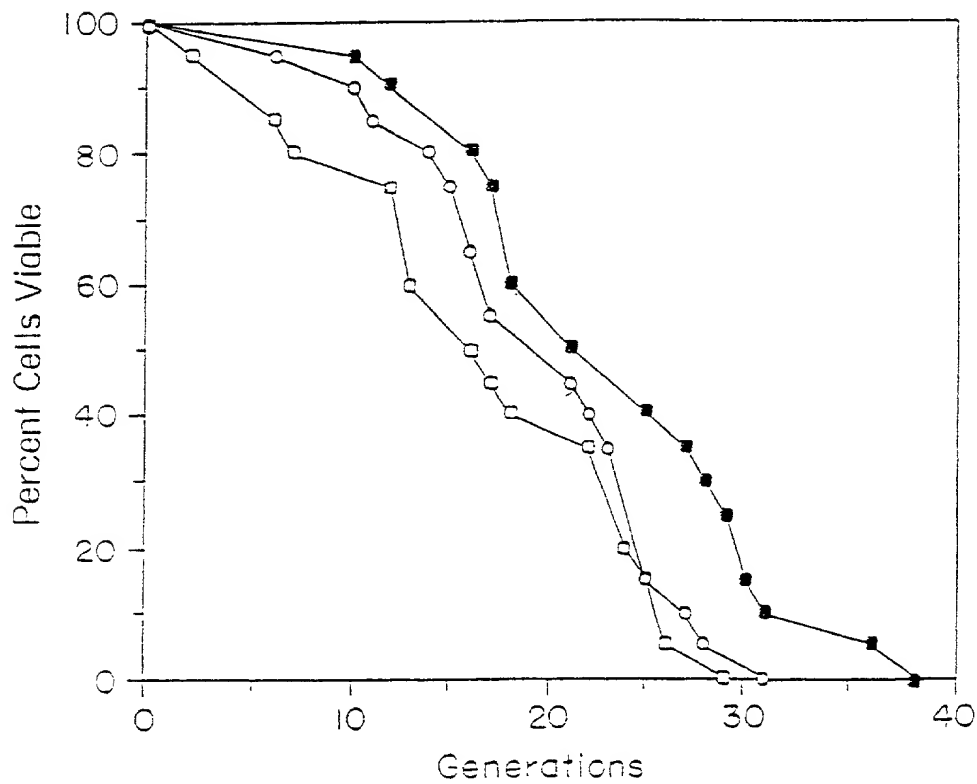


FIG. 11

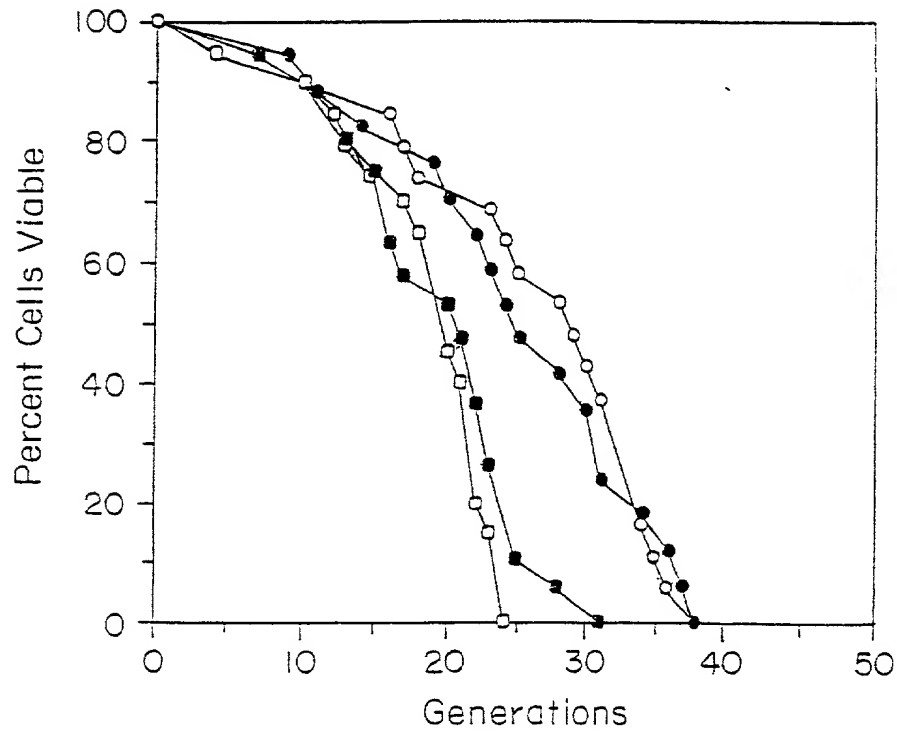


FIG. 12

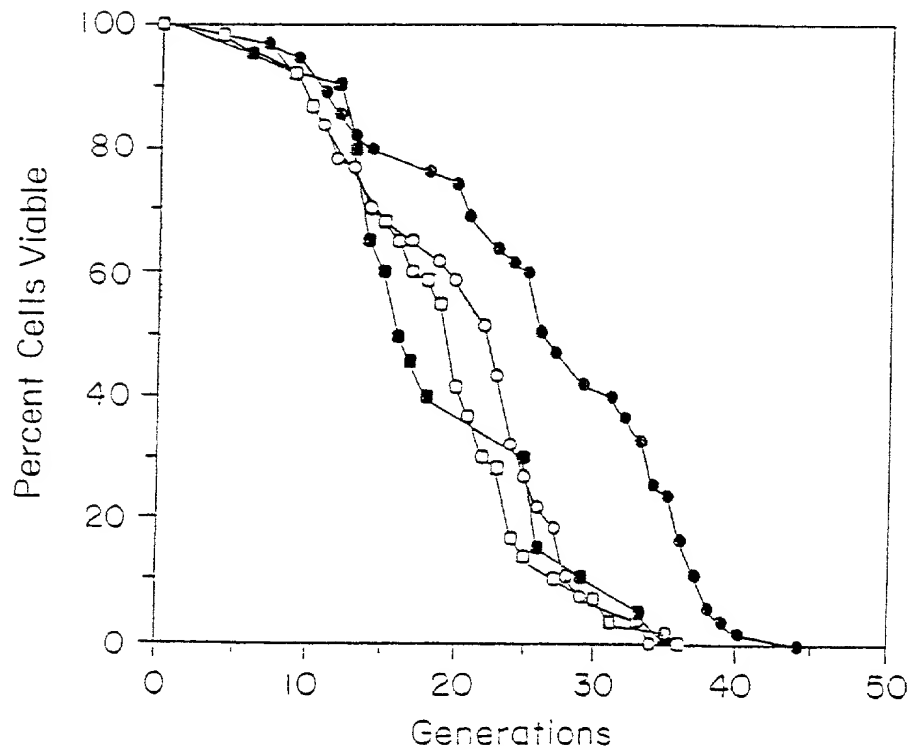


FIG. 13

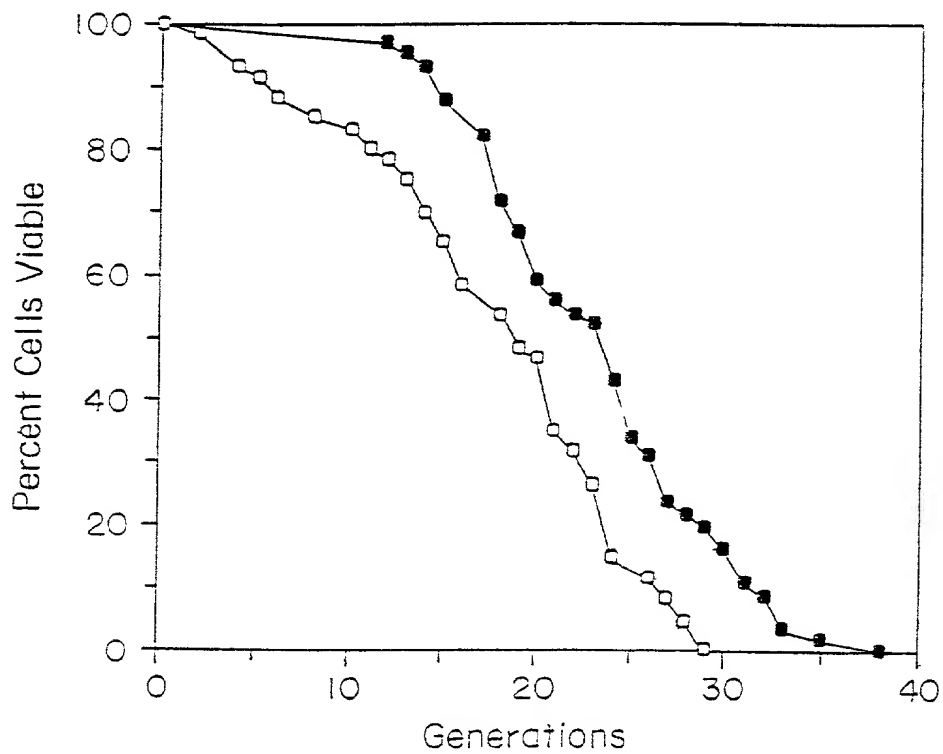


FIG. 14

FIG. 15A

FIG. 15A

FIG. 15B

FIG. 15B

FIG. 16A

FIG. 16A

FIG. 16B

361/121 TCC TGT CCT CTT TTT TTG CCA TCC TCT GTC GCC ATT GAA GTC GAA CTT TAT AGA TAG ATT
S C P L F F C H P S L C R V A I E K S N F I D R F L
421/141 TAC TCT TGA TTC TCA CGC ATC TCA GGC CAC CTG GAC ACT GTA CAT GGT TGT GAT TGT TCT
Y S * F S H A S Q A T W T L Y M V I V L S
481/161 CTT TCT CAG TTA TCG AAA TTG ATC CTA GGC TTA TAC TCC AAA ATC GGC TCT GCA CAC GCC
L S Q L S K N * S * A Y T P G H L Y S K I G S A H A
541/181 F L S V I E I D P R L I L I L TTT TAT TCA ATC AGA TCA ATA ACG
L F C G F T L Y * H N I L I L F I Q S D Q * R E
601/201 AAC CAT TTG TGG TTT CAC TTT ACT AAC ACA TTT TAA CTA CGT CTA CAT CAA ATA ACT CCT
N H F C G F T L Y * H N I L I L F I Q S D Q * R E
661/221 TTA TGT CTT ACA ATC ATC AGC CTC AAC TAT CTA TTA ACT CCG TCC AAT CAC TCT TGG AGC
* C L I I S A S T I Y * L L L T P S N H S W S
721/241 CCC TGA CCC CGC CTT TGG GCC AGA TGA ATA ACA AAA GAA ACC ATC AAA AGG CTC ATT
P * P L R L W A R * I T K E T I K R L I
R D P S A F G P D E * Q K K P H Q K A H S
V T P P L G Q M N N K R N H Q K A H S

FIG. 16B

FIG. 16C

781/261 CGC TTG ATC TCT CTG GTT TTA ATC AGT TCA TAT CAT CGA CAC AAT CTC CCT TGG CTT TGA
 R L * I S L W F F L I S V H I I S Y H R D T I S P L G F L M
 A L D L S G F F L I S S Q F I S S T Q S P L A L M
 841/281 TGA ATA ATA CAT CAA CAT CGA ATT CTG CTA ACT CTT TTT CCC CGA ATC CTA ATG CTG CTA
 * I I H Q H R I E F C * L F F P P E S * C C * S
 E * Y I N T S N S A N S F S P N P N A A S
 901/301 GCA ACT CCA CTG GGC TTT CAG CCT CAA TGG CAA ATC CTC CAG CCA GCC ACG ATT TCA CGG TTG
 A T L H W A F S L S A S M A N P A I L P L I N
 Q L S T G L S A S M A N P A I L P L I N
 961/321 TTG ATC TGG AAA TGG ATG GTC CCA GGA GAA AAT CAA GCC ACG ATT TCA CGG TTG
 ATG AGT L I W K W M V P Q E K I K S S S P A I L P L I N
 M S V * S G N G W S Q R R K S S H D F T V
 E F D L E M D G P R 1051/351
 1021/341 TTG CTC CGA ACT CTG GTG TCA ATA CCT CCA GTT TAA TTA TGG AAA CAC CAT CCT CTT
 L L L R T L W C Q Y L S I P P V * L Y G N T P S S
 C S F E L S G V N T S L I I M E T P S S
 A P S N S G V N T S L I I M E T P S S
 1081/361 CAG TGA CTC CTG CTG CAT CTC TCA GAA ATT TTA GCA ATA GTA ATA ATG CTG CTT CCA AAT
 Q * L L L H L S E I L A I V I M L L P N
 S D S C C I S Q K F * Q * S N S N A A S K C
 V T P A A S L R N F S N S N A A S K C
 1141/381 GTG GAG TGG ATA ATT CGT CAT TTG GTT TGA GCT CAA CGT CTT CAT CTA TGG TCG AAA
 V E W I I R H L V * A Q R L H L W S K
 W S G * F V I W P E * L N V F I Y G R N
 G V D N S S F G L S S S T S S M V E I

FIG. 16C

1201/401	TCA GCG CAC TAC CCC TTA GAG ATC TGG ATT ATA TCA AAC TTG CCA CTG ACC AGT TTTG GCT
S A H T' T' L P * R D L Y I S N L C H * T D A T' S P V W L A	
1261/421	GCC GTT TTC AAA AAT TAG AAA CCC CCV GTG AAT CCA ATA TGG TGA GAG ACT TGA
A V F S S K K K I R E T P Q * S E S N M V R D L M	
1321/441	TGT ATG AAC AAA TTA AGC CAT TTT TC'T TG'G ACC TTA TTT TGG ATC CGT TCG GTA ACT ATT
C M N T' Q I K P F I F L L D L I I L D P F G N Y L F L	
1381/461	TGG TTC AAC TAT GCG ATT ATT TAA CTG CCG AGC AAA AGA CAT TAT TAA TAC AAA CAA
W F K K T M C L Y L T A P S K R A K D I L L I Y I N N	
1441/481	TAT ATC CAA ATG TTT TCC AAA TAT CAA TCA ATC AGT ACG GAA CTC GTT CCT TAC AGA AAA
Y I S K C F P N I S I N Q S V R N S F S L L Q K I	
1501/501	TTA TAG ACA CTG TCG ATA ACG AAG TTC AAA TCG ATC TCA TTA TTA AGG GAT TTT CCC AAG
L * T H T V C R * R S S N I D L I I K G I F S O E	
1561/521	ATA CTT TTA CTG TGG TTA CT'T TGA TAA ACG ATC ATC TTA ATG GTA ACC ATG TGA
N L Y F D * A S V V T L I N D L N G W I * P C D I	

FIG. 16D

1621/541
 TTC AAA AGT GTA TTT TCA AAT TCT CGC CAT CAA AAT TTG GTT TCA TCA TAG ATG CTA TTG
 F K S V Y I F F S N S R A I I Q N L W F V S S * R C Y L L C
 S K V C I F F Q I L S P S K K I F G F I I D A I V
 Q K K
 1681/561
 TAG AAC AAA ATA ATA TTA CCA TTT CTA CCC ATA AAC ATG GTT GTT GCG TAC TAC AAA
 * N K I L S H Y H I T I S T P I N M V L L R T T K K
 R T K K N I I T I S T H K H G C C V L Q K
 E Q N
 1741/581
 AAT TAC TAA GCG TTT GTA CTC TAC AAC AAA TTT TCA AAA TTT CTG TGA AAA TTG TGC AGT
 N Y * A F L Y S T L Q I F K I S V K I V Q F
 I T K R V C T L Q I F Q N F C E N C A V
 L I S
 1801/601
 TCC TTC CTG GAT TAA GCG TTT GTA CTC TAC AAC AAA TTT TCA AAA TTT CTG TGA AAA TTG TGC AGT
 S F L D * S T I S V R G N Y I I I S S N F C E N C A V
 P S W I N Q R S D Q F G N Y I I Q F L L D I
 L P G L I N
 1861/621
 TCA AAG AAT TGG ACT TTT ACT TAT TGG CTG AGT TAT TTA ACC GTT TAT CCA ATG AAT TAT
 S K N W T F L L I L A E L F N R L S N E L C
 Q R I G L D F Y L L L A E L F N R L S N E L C
 K E L
 1921/641
 GTC AAC TAT CTT GTT TGA AGT TCT CCT CAA ATG TTG TGG AAA AAT TCA TTA AAA AAT TAT
 V N Y L V * S S O Q M L W K K I H * K I I I
 S T I L F E V L S S N V V E K F I K K L F
 Q L S C L K F S S N V V E K F I K K L F
 1981/661
 TTA GAA TCA TTA CTG GAT TTA TTG TTA ATA ACA ATG GGG GTG CCT CCC AAA GGA CTG CAG
 L E S L L W I Y C * N N N N G G A S Q R T A V
 * N H I T G F I V N N N G G A S Q R T A V

FIG. 16E

2041/681
 TTG CTT CTG ATG ACG TGA TTA ATG CTT CTA TGA ACA TTC TTT TGA CTA CCA TTG ATA TAT
 L L L M T * L M L L * T F F * L P L I Y
 C F * * R D * C F Y E H S F D Y H * Y I
 A S D D V I N A S M N I L L T T I D I F
 2101/701

2071/691
 TCA CAG TCA ATT TAA ATG TGC TAA TCA GGG ATA ATT TTG GTA ATT ATG CGT TAC AAA CGC
 S Q S I * M C * S G I I L V I M R Y K R
 H S Q F K C A N Q G * F W * L C V T N A
 T V N L N V L I R D N F G N Y A L Q T L
 2131/711

2161/721
 TAT TAG ACG TTA AGA ATT ATT CTC CTC TGC TTG CTT ACA ACA ATA GTA ACG CAA TTG
 Y * T L R I I L L C L L T T K I V T Q L
 I R R * E L F S S A C L Q Q K * * R N W
 L D V K N Y S P L L A Y N K N S N A I G
 2221/741

2251/751
 GGC AAA ACA GCT CTA GTA CAT TGA ATT ACG GTA ACT TTT GTA ACG ATT TTT CAT TGA AAA
 G K T A L V H * I T V T F V T I F H * K
 A K Q L * Y I E L R * L L * R F F I E N
 Q N S S T L N Y G N F C N D F S L K I
 2281/761

2311/771
 TTG GTA ACT TGA TTG TCC TTA CAA AAG AAT TAC TTC CAA GTA TTA AAA CTA CAT CCT ATG
 L V T * L S L Q K N Y F Q V L K L H P M
 W * L D C P Y K R I T S K Y * N Y I L C
 G N L I V L T K E L L P S I K T T S Y A
 2341/781

2371/791
 CAA AGA AAA TTA AGT TGA AAG TTA AAG CTT ATG CAG AAG CCA CAG GTA TAC CAT TCA CTG
 Q R K L S * K L K L M Q K P Q V Y H S L
 K E N * V E S * S L C R S H R Y T I H *
 K K I K L K V K A Y A E A T G I P F T D
 2401/801

2431/811
 ACA TAT CTC AAG TCA CTG CAA TGA GTC ATA ACA ATC TTC AAA CGA TTA ACA ACG AAA
 T Y L L K S L Q * V I T I F K R L T T K
 H I S S S H C N E S * Q S S N D * Q R K
 I S P Q V T A M S H N N L Q T I N N E N

FIG. 16F

FIG. 16G

2881/961
 GAT TTA AGC AGC CTG GAT TTA TGA TGA ATG AAA CCG ACA AAA TTA ATG CTA ATC ACT TCT
 D L S S L D L * M K P T K L M L I T S
 I * A A W I Y D E * N R Q N * C * S L L
 F K Q P G F M M N E T D K I N A N H F S
 2941/981
 CGC CAT ACT CTA ATG CAA ATA GTC AAA ACT TCA ATG AAT CTT TTG TGC CTC GTA TGC AAT
 R H T L M Q I V K T S M N L L C L V C N
 A I L * C K * S K L Q * I F C A S Y A I
 P Y S N A N S Q N F N E S F V P R M Q Y
 3001/1001
 ATC AAA CCG AAG GTG CAA ACT CGG ATT CAA GTT TGT CAA TGA AGT CGC AGC ATA TTG GTC
 I K R K V Q T G I Q V C Q * S R S I L V
 S N G R C K L G F K F V N E V A A Y W S
 Q T E G A N W D S S L S M K S Q H I G Q
 3061/1021
 AAG GCC CAT ATA ATC AAG TTA ATA TGA GCC GCA ACG CTA GTA TTT CCA ATA TGC CTG CCA
 K A H I I K L I * A A T L V F P I C L P
 R P I * S S * Y E P Q R * Y F Q Y A C H
 G P Y N Q V N M S R N A S I S N M P A M
 3121/1041
 TGA ATA CCG CTA GAA CAT CTG ATG AAC TTC AAT TCA CTT TGC CAT AAT ACT TTT TTT TCT
 * I P L E H L M N F N S L C H N T F F S
 E Y R * N I * T S I H F A I I L F F L
 N T A R T S D E L Q F T L P * Y F F F
 3181/1061
 TTC TTT TTT CCT TCT TAC TGT ACA AAT ATT TTA CGC AGA AAT CAA AGA CAA AAG AAA
 F F F P S Y C T N I L R R N Q R Q K K
 S F S F L L T V Q I F Y A E I K D K R K
 L F L S F L L Y K Y F T Q K S K T K E K
 3241/1081
 AAT AAA AAA TAA AAA ATA AAA AAT TCA ACT AAG CAA TGA CGT CCT ACT AAA GTC CCA AAA
 N K K * K I K N S T K Q * R P T K V P K
 I K N K K * K I Q L S N D V L L K S Q N
 * K I K N K K F N * A M T S Y * S P K I

FIG. 16H

3301/1101
TTT GAG CCG GAA AAA AAT GGT AAA GCA AAC TAT TGC CAT CTT TAT ATT TNG TAT TCT GTT
F E P E K N G K A N Y C H L Y I L Y S V
L S R K K M V K Q T I A I F I C I L F
* A G K K W * S K L L P S L Y F V F C F
3361/1121
TCC GAA CAC GTA TCC AAA ATC CTC CCA CTG CCT TNG CAG GGT TAG CAT TGC TCC CTA CCA
S E H V S K I L P L P L Q G * H C S L P
P N T Y P K S S H C L C R V S I A P Y Q
R T R I Q N P P T A F A G L A L L P T K
3421/1141
AAA TGA TCT AAT TTT TTT TTG AAT CGT TTT TTG TC
K * S N F F L N R F L
N D L I F F * I V F C
M I * F F F E S F F V

3331/1111
3391/1131
3451/1151

FIG. 161

1/1
GTG TCT TCC ATG GAG TGA ATT GTG ATT TGT GAA TTA TAT CTG TCC AAT ACC GTT GCC TTG
V S S M E * I V I C E L Y L S N T V A L
C L P W S E L * F V N Y I C P I P L P C
V F H G V N C D L * I I S V Q Y R C L V
61/21
TTG GGA GCT CAG ATA GAA AAG ACA TCT TAA TTC CAG ACA GTC TAT TCT CTG TCT ATT TCT
L G A Q I E K T S * F Q T V Y S L S I S
W E L R * K R H L N S R Q S I L C L F L
G S S D R K D I L I P D S L F S V Y F S
121/41
CTT TGT GAC TGC AAA TTT TAA TTT GTG ACG CCT TTT CTT ATT ACT CAT GTA TTT GTC ACT
L C D C K F * F V T P F L I T H V F V T
F V T A N F N L * R L F L L L M Y L S L
L * L Q I L I C D A F S Y Y S C I C H S
181/61
CTT GAC GAT TGT TTT TCT ATA TTT TTT TTG TTC TGG GGT CCT CCA GAG AAT AAA AAA
L D D C F F S I F F L F W G P P E N K K
L T I V F F L Y F F C S G V L Q R I K N
* R L F F Y I F F V L G S S R E * K I
241/81
TAA TGA TCA ATA TAG ATA GTA TAG TTA TAT TCT TAT TCG TTG CAC CTT GTT TAA CAA
* S I * I V * L Y S Y S L H L V * Q
N D Q Y S R * Y S Y I L I R C T L F N K
M I N I V D S I V I F L F V A P C L T N
301/101
ATC ACT CAG ACT CAA AGA GAA TAT CGG TTG GTT ATC TCT CTC CGA AGG TGA ACA GCA AAC
I T Q T Q R E Y R L V I S L R R * T A N
S L R L K E N I G W L S L S E G E Q Q T
H S D S K R I S V G Y L S P K V N S K Q
361/121
AGT ACC TCA CGT CTT TTT TTT TTT TAG TTT TTT TTT TTG TTT AAA CAG AAA AAC AAC TTT
S T S R L F F E * F F F L L K Q K K N F
V P H V F F L N S F F F C * N R K K T F
Y L T S F F * I V F F V E T E K K L S

FIG. 17A

421/141
CTT CCG TAT ATT ACA TTG TAC ATT ATT TTT ATT GTA TTT TAG TTT CCA ACG TTA GGA TTT
L P Y I T L Y I I F I V F * F P T L G F
F R I L H C T L F L Y F S F Q R * D L
S V Y Y I V H Y F Y C I L V S N V R I *

451/151
481/161
GAG CCG TCA TTA ATA TTA TTC GTT TTT GTA CAC TAT TCC AGA CGA TTT ATT TTT AGT ACA
E P S L I L Y Y S F L Y T I P D D L F L V H
S R H * Y Y I I R F C T L F Q T I Y F * Y T
A V I N I I R F C T L F Q T I Y F * Y T
541/181
CTT AAA ATT CCT GTT GAT ATT GTC CAC TAG TTC TCT TTT CAT ATT TTA TTT TCG CTT ATT
L K I P V D I V H * F S F H I L F S L I
L K F L I L S T S S L F I F Y F R L F
* N S C * Y C P L V L F S Y F I F A Y S
601/201
CTT TAG GTT TTA AGA GTC TCT GTT CAT TTT CCG TTC TTA CTG TTT CTT TGT CCT CGA
L * V L L R V S V H F P F L L F L C P R
F R F F * E S L F I F R S Y C F F V L D
L G S F K S L C S F S V L T V S L S S I
661/221
TAT CTT TTA AGA AAG AGA GAA CTA AGC GCT GTA ACA TTT TTA AGT GGA CCT ACG TTA TGT
Y L L R K R E L S A V T F L S G P T L C
I F * E R E N * A L * H F * V D L R Y V
S F K K E R T K R C N I F K W T Y V M S
721/241
CTA CAA AAG GTT TGA AAG AAG AAA TCG ATG ATG TAC CAT CAG TAG ACC CTG TCG TTT CAG
L Q K V * K K K S M Y H Q * T L S F Q
Y K R F E R R N R * C T I S R P C R F R
T K G L K E E I D D V P S V D P V S E

FIG. 17B

781/261
AAA CAG TCA ATT CTG CTT TAG AGC AGT TGC AAC TAG ATG ATC CAG AGG AAA ACG CCA CCT
K Q S I L L * S S C N * M I Q R K T P P
N S Q F C F R A V A T R * S R G K R H L
T V N S A L E Q L Q L D D P E N A T S
841/281
CTA ATG CAT TTG CGA APA AAG TTT CTC AAG ATT CTC AAT TCG CTA ATG GCC CTC CGT CGC
L M H L R I K F L K I L N S L M A L R R
* C I C E * S F S R F S I R * W P S V A
N A F A N K V S Q D S Q F A N G P P S Q
901/301
AAA TGT TTC CAC ATC CAC AAA TGA TGG GTG GAA TGG GCT TCA TGC CCT ACT CTC AAA TGA
K C F H I H K * W V E W A S C P T L K *
N V S T S T N D G W N G L H A L L S N D
M F P H P Q M M G G F M P Y S Q M M
961/321
TGC AGG TTC CTC ATA ATC CTT GTC CAT TTT TTC CGC CCC CTG ATT TTA ATG ATC CAA CAG
C R F L I I L V H F F R P L I L M I Q Q
A G S S * S L S I F S A P * F * S N S
Q V P H N P C P F F P P D F N D P T A
1021/341
CAC CAT TGA GTA GCT CGC CCT TGA ATG CAG CGC GTC CAC CAA TGT TAT TCA AGA ATG ACT
H H * V A R P * M Q A V H Q C Y S R M T
T I E * L A L E C R R S T N V I Q E * L
P L S S P L N A G G P P M L F K N D S
1081/361
CAC TTC CAT TTC AAA TGC TGT CTT CGG GTG CTG CGG TAG CAA CTC AAG GTG GAC AAA ATC
H F H F K C C L R V L R * Q L K V D K I
T S I S N A V F G C C G S N S R W T K S
L P F Q M L S S G A A V A T Q G G Q N L
1141/381
TAA ACC CAT TGA TAA ATG ACA ATT CAA TGA AGG TAT TGC CAA TCG CAT CGG CTG ATC CGT
* T H * M T I Q * R Y C Q S H R L I R
K P I D K * Q F N E G I A N R I G * S V
N P L I N D N S M K V L P I A S A D P L

FIG. 17C

1201/401
TAT GGA CTC ATT CAA ACG TAC CAG GAT CAG CAT CTG TAG CCA TTG AAG AAA CCA CCG CTA
Y G L I Q T Y Q D Q H L * P L K K P P L
M D S F K R T R I S I C S H * R N H R Y
W T H S N V P G S A S V A I E E T T A T
1261/421
CTC TAC AAG AAA GCC TAC CAT CTA AGG GCA GGG AGT CTA ATA ATA AGG CTA GTT CGT TCA
L Y K K A Y H L R A G S L I I R L V R S
S T R K K P T I * G Q G V * * G * F V Q
L Q E S L P S K G R E S N N K A S S F R
1321/441
GAA GAC AAA CTT TTC ATG CTT TAT CAC CAA CTG ACC TTA TCA ATG CGG CCA ACA ATG TAA
E D K L F M L Y H Q L T L S M R P T M *
K T N F S C F I T N * P Y Q C G Q Q C N
R Q T F H A L S P T D L I N A A N N V T
1381/461
CCT TGT CAA AGG ACT TCC AAT CTG ACA TGC AGA ATT TTT CTA AGG CTA AGA AAC CGT CTG
P C Q R T S N L T C R I F L R L R N R L
L V K G L P I * H A E F F * G * E T V C
L S K K D F Q S D M Q N F S K A K K P S V
1441/481
TAG GAG CTA ACA ATA CTG CAA AAA CCA GAA CTC AAT CCA TAT CTT TTG ATA ATA CTC CCT
* E L T I L Q K P E L N P Y L L I I L P
R S * Q Y C K N Q N S I H I F * * Y S L
G A N N T A K T R T Q S I S F D N T P S
1501/501
CCT CAA CGT CAT TTA TAC CCC CAA CCA ATA GTG TTT CTG AGA AAT TAT CCG ATT TCA AAA
P Q R H L Y P Q P I V F L R N Y P I S K
L N V I Y T P N Q * C F * E I I R F Q N
S T S F I P P T N S V S E K L S D F K I
1561/521
TAG AAA CCT CGA AGG AGG ATT TGA TTA ATA AAA CTG CAC CAG CTA AAA AAG AGA GTC CTA
* K P R R I * L I K L H Q L K K R V L
R N L E G G F D * * N C T S * K R E S Y
E T S K E D L I N K T A P A K K E S P T

FIG. 17D

1621/541
CAA CTT ATG GTG CAG CAT ATC CAT ATG GGG GAC CTT TAC TTC AAC CAA ATC CTA TTA TGC
Q L M V Q H I H M G D L Y F N Q I L L C
N L W C S I S I W G T F T S T K S Y Y A
T Y G A A Y P Y G G P L Q P N P I M P
1681/561
CAG GCC ACC CAC ATA ATA TAT CCT CCC CTA TCT ATG GTA TTA GAT CAC CTT TTC CTA ATT
Q A T H I I Y P P L S M V L D H L F L I
R P P T * Y I I L P Y L W Y * I T F S * F
G H P H N I S S P I Y G I R S P F P N S
1741/581
CTT ATG AAA TGG GCG CGC AAT TTC AAC CTT TCT CTC CGA TTT TAA ATC CTA CGA GTC ATT
L M K W A R N F H L S L R F * I L R V I
L * N G R A I S T F L S D F K S Y E S F
Y E M G A Q F Q P F S P I L N P T S H S
1801/601
CAC TAA ATG CAA ATT CTC CAA TTC CTC TAA CCC AAT CGC CAA TTC ATC TTG CAC CAG TTT
H * M Q I L Q F L * P N R Q F I L H Q F
T K C K F S N S N P I A N S S C T S F
L N A N S P I P L T Q S P I H L A P V L
1861/621
TAA ACC CTA GTT CAA ATT CTG TTG CCT TTT CAG ATA TGA AGA ATG ATG GTG GTA AGC CCA
* T L V Q I L L P F Q I * R M M V V S P
K P * F K F C C L F R Y E E * W W * A H
N P S S N S V A F S D M K N D G G K P T
1921/641
CCA CCG ATA ACG ACA AGG CGG GTC CAA ATG TTA GGA TGG ATT TAA TAA ATC CTA ATC TTG
P P I T R R V Q M L G W I * I L I L
H R * R Q G G S K C * D G F N K S * S W
T D N D K A G P N V R M D L I N P N L G
1981/661
GGC CAT CAA TGC AAC CTT TCC ACA TAT TAC CTC CCC AGC AAA ACA CCC CCC CTC CCT
G H Q C N L S T Y Y L P S K T P P L L P
A I N A T F P H I T S P A K H P P S S L
P S M Q P F F H I L P P Q Q N T P P P P W

FIG. 17E

2041/681
 GGC TTT ATA GCA CTC CAC CTC CCT TCA ACG CAA TGG TTC CGC CTC ATT TGT TGG CTC AAA
 G F I A L H L P S T Q W F R L I C W L K
 A L * H S T S L Q R N G S A S F V G S K
 L Y S T P P P F N A M V P P H L L A Q N
 2101/701
 NYC ATA TGC CGT TAA TGA ATA GCG CCA ATA ATA AAC ATC ATG GTC GTA ATA ACA ATA GCA
 I I C R * I A P I I N I M V I T I A
 S Y A V N E * R Q * * T S W S * * Q * H
 H M P L M N S A N K H H G R N N S M
 2161/721
 TGT CAA GTC ATA ATG ACA ATG ACA ACA TTG GTA ATT CTA ATT ACA ACA ATA AAG ACA CAG
 C Q V I M T M T T L V I L I T I K T Q
 V K S * * Q * Q H W * F * L Q Q * R H R
 S S H N D N D N I G N S N Y N N K D T G
 2221/741
 GTC GTT CTA ACG TTG GTA AAA TGA AAA ATA ATA ATA ACA GTT ATC ATG GCT ACT ATA ATA
 V V L T L V K * K I * K T V I M A T I I
 S F * R W * N E K Y E K Q L S W L L * *
 R S N V G K M K N M K N S Y H G Y Y N N
 2281/761
 ACA ATA ATA ATA ATA ATA ATA ACA ATA ATA ATA ACA GTA ATG CTA CCA ACA GCA
 T I I I I I I T I I I I I T V M L P T A
 Q * * * * * Q * * * * Q * C Y Q Q Q
 N N N N N N N N N N N N S N A T N S N
 2341/781
 ACA GCG CGG AAA AAC GTA AAA TTG AGG AGT CGT CGA GAT TTG CGG ACG CMG TTT TAG
 T A R K N N V K L R S R R D L R T Q F *
 Q R G K T T * N * G V V E I C G R S F R
 S A E K Q R K I E E S S R F A D A V L D
 2401/801
 ACC AAT ATA TCG GAA GTA TTC ACT CAT TGT GTA AAG ACC AAC ATG GTT GTC GTT TTC TGC
 T N I S E V F T H C V K T N M V V F C
 P I Y R K Y S L I V * R P T W L S F S A
 Q Y I G S I H S L C K D Q H G C R F L Q

FIG. 17F

2461/821
 AAA AGC AGT TCG ATA TTC TCG GCA GTA AGG CGG CGG ACC GAA TTT TTG AAG AAA CTA AGG
 K S S W I F S A V R R R R T E F L K K L R
 K A V G Y S R Q * G G G P N F * R N * G
 K Q L D I L G S K A A D R I F E E T K D
 2521/841
 ATT ATA CGG TTG AAT TGA TGA CTG ATT CAT TCG GTA ATT ATT TGA TCC AGA AGC TAT TGG
 I I R L N * * L I H S V I I * S R S Y W
 L Y G * I D D * F I R * L F D P E A I G
 Y T V E L M T D S F G N Y L I Q K L L E
 2581/861
 AAG AGG TTA CCA CAG AAC AAA GAA TCG TAC TCA CAA AAA TAT CTT CCC CTC ATT TTG TCG
 K R L P Q N K E S Y S Q K Y L P L I L S
 R G Y H R T K N R T H K N I F P S F C R
 E V T T E Q R I V L T K I S S P H F V E
 2641/881
 AAA TTT CCT TAA ACC CTC ATG GTA CTA GGG CAT TAC AAA AAC TCA TTG AAT GCA TCA AAA
 K F P * T L M V L G H Y K N S L N A S K
 N F L K P S W Y * G I T K T H * M H Q N
 I S L N P H G T R A L Q K L I E C I K T
 2701/901
 CAG ATG AAG AAG CAC AGA TTG TTG TTG ATT CTT TAC GCC CTT ATA CTG TCC AGT TGA GTA
 Q M K K H R L L L I L Y A L I L S S * V
 R * R S T D C C * F F T P L Y C P V E *
 D E E A Q I V V D S L R P Y T V Q L S K
 2761/921
 AGG ATT TAA ATG GTA ATC ATG TTA TTC AAA AAT GTT TGC AAA GGT TGA AGC CTG AAA ACT
 R I * M V I M L L F K N V C K G * S L K T
 G F K W * S C Y S K M F A K V E A * K L
 D L N G N H V I Q K C L Q R L K P E N F
 2821/941
 TCC AGT TTA TCT TTG ACG CAA TCT CTG ATA GCT GTA TTG ATA TTG CTA CTC ATA GAC ACG
 S S L S L T Q S L I A V L I L L I L I D T
 P V Y L * R N L * * L Y * Y C Y S * T R
 Q F I F D A I S D S C I D I A T H R H G

FIG. 17G

2881/961
GGT GTT GCG TTT TGC AAC GTT GTC TAG ATC ATG GGA CTA CAG AAC AAT GTG ACA ATC TGT
G V A F C N V * I M G L Q N N V T I C
V L R F A T L S R S W D Y R T M * Q S V
C C V L Q R C L D H G T T E Q C D N L C

2911/971
2941/981
GTG ATA AGT TGC TAG CCC TTG TTG ATA AAT TAA CTT TGG ATC CAT TTG GCA ACT ATG TGG
V I S C * P L L I N * L W I H L A T M W
* * V A S P C * I N F G S I W Q L C G
D K L L A L V D K L T L D P F G N Y V V

2971/991
3001/1001
TGC AAT ATA TAA CCA AAG AGG CTG AGA ACA AAT ATG ATT ATA CGC ATA AAA TTG
C N I * L P K R L R T N M I I R I K L
A I Y N Y Q R G * E E Q I * L Y A * N C
Q Y I I T K E A E K N K Y D Y T H K I V

3031/1011
3061/1021
TCC ACC TGT TGA AAC CAA GAG CCA TCG AAC TTT CTA TCC ATA AAT TTG GAT CAA ATG TGA
S T C * N Q E P S N F L S I N L D Q M *
P P V E T K S H R T F Y P * I W I K C D
H L L K P R A I E L S I H K F G S N V I

3121/1041
3151/1051
TTG AAA AAA TCT TGA AGA CAG CTA TTG TTT CGG AGC CAA TGA TTC TGG AAA TTT TAA ATA
L K K S * R Q L L F R S Q * F W K F * I
* K N L E D S Y C F G A N D S G N F K *
E K I L K T A I V S E P M I L E I L N N

3181/1061
3211/1071
ATG GTG GCG AGA CGG GTA TTC AAT CAT TGT TGA ATG ATA GCT ACG GAA ATT ACG TTT TAC
M V A R R V F N H C * M I A T E I T F Y
W W R D G Y S I I V E * * L R K L R F T
G G E T G I Q S L L N D S Y G N Y V L Q

3241/1081
3271/1091
AGA CAG CAT TAG ACA TTT CTC ATA AGC AAA ATG ACT ATC TCT ATA AAA GAC TAT CAG AGA
R Q H * T F L I S K M T I S I K D' Y Q R
D S I R H F S * A K * L S L * K T I R D
T A L D I S H K Q N D Y L Y K R L S E I

FIG. 17H

3301/1101
TTG TGG CGC CTT TAC TGG TGG GCC CCA TAA GAA ATA CAC CTC ATG GTA AAA GAA TCA TCG
L W R L Y W A P * E I H L M V K E S S
C G A F T G G P H K K Y T S W * K N H R
V A P L L V G P I R N T P H G K R I I G

3331/1111
3361/1121
GAA TGT TAC ATT TAG ATT CAT AGT TGA TAC ATA TAT CCT CAG TTT AGC TTT TTT TTT TAC GTT
E C Y I * I H S * Y I Y P Q F S F F Y V
N V T F R F I V D T Y I L S L A F F T L
M L H L D S * L I H I S S V * L F L R *

3391/1131
3421/1141
AGC CTC ATA TAA TAT CTT TTG TAC AAT ACT AAA ATA CAT CAT TTT TTT TTT CGT TGA GGA
S L I * Y L L Y N T K I H F F F R * G
A S Y N I F C T I L K Y I I F F F V E D
P H I I S F V Q Y * N T S F F S L R I

3451/1151
3481/1161
TCA AAT GAA TAT CCA AAG CAA AAA AAA TAG GAA TTT TCA CTT TAT GGT ATA CTG GTA AAT
S N E Y P K Q K * E F S L Y G I L V N
Q M N I Q S K K N R N F H F M V Y W * I
K * I S K A K K I G I F T L W Y T G K *

3511/1171
3541/1181
AGT GTT GAA GAA ATA AGA GAA GAA GAT CGC CCT AGA AAA CAG AAT GTT CTT AAT TAA ATA
S V E I R E G D R P R K Q N V L I * I
V L K K * E K E I A L E N R M F L F K *
C * R N K R R S P * K T E C S Y L N K

3571/1191
3601/1201
AGT AAA CTC AAA AGA AAA AAA GGA AGG AAG TTT TTG AGA ACT TTT ATC TAT ACA AAC
S K L K R K K K G R K F L R T F I Y T N
V N S K E K K K E G S F * E L L S I Q T
* T Q K K K R K E V F E N F Y L Y K R

3631/1211
3661/1221
GTA TAC GTT TAA CTA TCT GGA TAA ACG TCG CAC AGG ATA CTG TAG AGG TCC TCA AGA
V Y V * L S G * T S L H R I L * R S S R
Y T F N Y L D K R R S T G Y C R G P Q D
I R L T I W I N V A P Q D T V E V L K I

3691/1231

FIG. 171

3721/1241
 TCA CCG TTA TTA ACA AAT TCA TCT AGT GTC CCC AAA TTA AAA CTA GTT GCA GAA AAA TTG
 S P L L T N S S S V P K L K L V A E K L
 H R Y * Q I H L V S P N * N * L Q K N C
 T V I N K F I * C P Q I K T S C R K I V
 3751/1251
 3781/1261
 TTA CTG TTG TTG TTA ATA TTG TTA ATA TTG TTT TTA TTG TTG TTG TTG ATT TCA
 L L L L L I L I L I L F L L L L L L I S
 Y C C C C * Y C * Y C F Y C C C C * F H
 T V V V V N I V N I V F I V V V D F I
 3811/1271
 3841/1281
 TTT GTG TTC ATA AAT CGT ACT TGT ACT GAA GTG GGT ATT TGC TGC TGA GCA TTG ATT GGT
 F V F I N G T C T E V G I C C * A L I G
 L C S * M V L V L K W V F A A E H * L V
 C V H K W Y L Y * S G Y L L L S I D W F
 3871/1291
 3901/1301
 TTA TTA GAT TGG ACT TGC GAA TTA TTT TGC CCA TTT GTT GGT TGC GCG TAA TCG GGA TTG
 L L D W T C E L F C P F V G C A R N R D *
 Y * I G L A N Y F A H L L V A R N R D *
 I R L D L R I I L P I C W L R V I G I D
 3931/1311
 3961/1321
 ATC ATA TCA GAC ACG GAT AAT GAC CTA AAT GAA GGC AAT T
 I I S D T D N D L N E G N
 S Y Q T R I M T * M K A I
 H I R H G * * P K * R Q
 3991/1331

FIG. 17J

1/1
 gaa gat cgg ggg gct gaa atc cat ctt cat acc gct ccg ccc gtg ttg gtg gaa tga
 E D R G A E I H L H P T A P P V L V E *
 K I G G L K S I F I L P L R P C W W N E S
 R S G G * N P S S Y R S A R V G G M S
 31/11
 61/21
 gcg ttg cat gtg tct tga aga gaa aag cag tgc ttt ggc agg act ctt tca gcc ccc acc
 A L H V S * R E K Q C F G R T L S A P T
 R C M C L E E K S S A L A G L F Q P P P
 V A C V L K R K A V L W Q D S F S P H L
 151/51
 121/41
 tga aac atc acc ctc aag aac cag cta atc aca tgc ctg ttg ttt tga cat ctg gaa
 * N I T L K N Q L I P T C L L F * H L E
 E T S P S R T S * S Q H A C C F D I W N
 K H H P Q E P A N P N M P V L T S G T
 211/71
 181/61
 cag ggt cgc aag cgc agc cac aac cag ctg caa atc agg ctc ttg cag ctg gga ctc act
 Q G R K R S H N Q L Q I R L L Q L G L T
 R V A S A A T T S C K S G S C S W D S L
 G S Q A Q P Q P A A N Q A L A A G T H S
 271/91
 241/81
 cca gcc ctg tcc cag gat cta tag gag ttg cag gcc gtt ccc agg acg acg cta tgg tgg
 P A L S Q D L * E L Q A V P R T T L W W
 Q P C P R I Y R S C R P F P G R R Y G G
 S P V P G S I G V A G R S Q D D A M V D
 331/111
 301/101
 act act tct ttc aga ggc agc atg gtg agc agc ttg ggg gag gag gaa gtg gag gag gcg
 T T S F R G S M V S L G E E V E E A
 L L L S E A A W * A A W G R R K W R R R
 Y F F Q R Q H G E Q L G G G S G G G
 391/131
 361/121
 gct ata ata gca aac atc gat ggc cta ctg ggg ata acg ttc atg cag aac atc agg
 A I I I A N I D G L L G I T F M Q N I R
 L * * Q T S M A Y W G * H S C R T S G
 Y N N S K H R W P T G D N I H A E H Q V

FIG. 18A

421/141 451/151
tgc gtt cca tgg atg aac tga atc att ttc aag cac ttg ctg tgg agg gaa gag cga
C V P W M N * I M I F K H L L W R E R
A F H G * T E S * F S S T C S G G K S D
R S M D E L N H D F Q A L A L E G R A M
481/161 511/171
tgg gag agc agc tct tgc cag gta aaa agt ttt ggg aaa cag atg aat cca gca aag atg
W E S S S C Q V K S F G K Q M N P A K M
G R A A L A R * K V L G N R * I Q Q R W
G E Q L L P G K K F W E T D E S S K D G
541/181 571/191
gac caa aag gaa tat tcc tgg gtg atc aat ggc gag aca gtg cct ggg gaa cat cag atc
D Q K E Y S W V I N G E T V P G E H Q I
T K R N I P G * S M A R Q C L G N I R S
P K G I F L G D Q W R D S A W G T S D H
601/201 631/211
att cag ttt ccc agc caa tca tgg tgc aga gaa gac ctg gtc aga gtt tcc atg tga aca
I Q F P S Q S W C R E D L V R V S M * T
F S F P A N H G A E K T W S E F P C E Q
S V S Q P I M V Q R R P G Q S F H V N S
661/221 691/231
gtg agg tca att ctg tac tgt ccc cac gat cgg aga gtg ggg gac tag gcg tta gca tgg
V R S I L Y C P H D R R V G D * A L A W
* G Q F C T V P T I G E W G T R R * H G
E V N S V L S P R S E S G G L G V S M V
721/241 751/251
tgg agt atg tgt tga gct cat ccc cgg gcg att cct gtc taa gaa aag gag gat ttg gcc
W S M C * A H P R A I P V * E K E D L A
G V C V E L I P G R F L S K K R R I W P
E Y V V L S S S P G D S C L R K G G F G P

FIG. 18B

781/261
 caa ggg atg cag aca gtg atg aaa acg aca aag gtg aaa aga aga aca agg gta cgt ttg
 Q G M Q T V M K T T K V K R R T R V R L
 K G C R Q * * K R Q R * K E E Q G Y V *
 R D A D S D E N D K G E K K N K G T F D
 811/271
 841/281
 atg gag ata agc tag gag att tga agg agg gtg atg tga tgg aca aga cca atg gtt
 M E I S * E I * R R R V M * W T R P M V
 W R * A R R F E G G * C D G Q D Q W F
 G D K L G D L K E E G D V M D K T N G L
 901/301
 tac cag tgc aga atg gga ttg atg cag acg tca aag att tta gcc gta ccc ctg gta att
 Y Q C R M G L M Q T S K I L A V P L V I
 T S A E W D * C R R Q R F * P Y P W * L
 P V Q N G I D A D V K D F S R T P G N C
 961/321
 gcc aga act ctg cta atg aag tgg atc ttc tgg gtc caa acc aga atg gtt ctg agg gct
 A R T L L M K W I F W V Q T R M V L R A
 P E L C * * S G S S G S K P E W F * G L
 Q N S A N E V D L L G P N Q N G S E G L
 1021/341
 tag ccc agc tga cca gca cca atg gtg cca agc ctg tgg agg att tot cca aca tgg agt
 * P S * P A P M V P S L W R I S P T W S
 S P A D Q H Q W C Q A C G G F L Q H G V
 A Q L T S T N G A K P V E D F S N M E S
 1081/361
 ccc aga gtg tac cct tgg acc cca tgg acc atg tgg gca tgg agc cta ttc agt ttg att
 P R V S P W T P W N M W A W S L F S L I
 P E C P L G P H G T C G H G A S S V * L
 Q S V P L D P M E H V G M E P L Q F D Y
 1141/381
 att cag gca cgc agg tac ctg tgg act cag cag cag caa ctg tgg gac ttt ttg act aca
 I Q A R R Y L W T Q Q Q L W D F L T T
 F R H A G T C G L S S S N C G T F * L Q
 S G T Q V P V D S A A A T V G L F D Y N

FIG. 18C

1201/401
att ctc aac aag agc tgt tcc aaa gac cta atg cgc ttg ctg tcc agc agt tga cag ctg
I L N N S C S K D L M R L L S S S * Q L
F S T T A V P K T * C A C C P A V D S C
S Q Q Q L F Q R P N A L A V Q Q L T A A

1231/411
1261/421
ctc agc agc agc agt atg cao tgg cag ctg ctc atc agc cgc aca tgg gtt tag ctg ccg
L S S S S M H W Q L L I S R T S V * L P
S A A A V C T G S C S S A A H R F S S R
Q Q Q Q Y A L A A H Q P H I G L A P A

1291/431
1321/441
ctg cgt ttg tcc cca atc cat aca tca tca ggc ctg ctc ccc cag gga cgg acc cct aca
L R L S P I H T S S A L L P Q G R T P T
C V C P Q S I H H Q R C S P R D G P L H
A F V P N P Y I I S A A P P G T D P Y T

1351/451
1381/461
cag ctg gat tgg ctg cag cga cac tag gcc cag ctg tgg tcc ctc acc agt att atg
Q L D W L Q Q R H * A Q L W S L T S I M
S W I G C S S D T R P S C G P S P V L W
A G L A A A A T L G P A V V P H Q Y Y G

1411/471
1441/481
gag tta ctc cct ggg gag tct acc ctg cca gto ttt tcc agc agc aag ctg ccg ctg ccg
E L L P G E S T L P V F S S S K L P L P
S Y S L G S L P C Q S F P A A S C R C R
V T P W G V Y P A S L F Q Q A A A A A

1471/491
1501/501
ctg cag caa cta att cag cta atc aac aga cca ccc cag agc ctc agc aag gac agc agc
L Q Q L I Q L I N R P P H R L S K D S S
C S N * F S S * S T D H P T G S A R T A A
A A T N S A N Q Q T T P Q A Q Q G Q Q Q

1531/511
1561/521
agg ttc tcc gtg gag cca gcc aac gto ctt tga ccc caa acc aga acc agc agc agc
R F S V E E P A N V L * P Q T R T S R D
G S P W R S Q P T S F D P K P E P A G T
V L R G G A S Q R P L T P N Q N Q Q G Q

FIG. 18D

1621/541
agc aaa cgg atc ccc ttg tgg cag ctg cag cag tga att ctg ccc ttg cat ttg gac aag
S K R I P L W Q L Q Q * I L P L H L D K
A N G S P C G S C S S E F C P C I W T R
Q T D P L V A A A V N S A L A F G Q G
1681/561
gtc tgg cag gca tgc cag gtt atc cgg tgt tgg ctc ctg ctg ctt act atg acc aaa
V W Q Q A C Q V I R C W L L L L T M T K
S G S R H A R L S G V G S C C L L * P N
L A A G M P G Y P V L A P A A Y Y D Q T
1741/581
ctg gtg ccc ttg tag tga atg cag gcg cga gaa atg gtc ttg gag ctc ctg ttg gac ttg
L V P L * M Q A R E M V L E L L F D L
W C P C S E C R R E K W S W S S C S T C
G A L V V N A G A R N G L G A P V R L V
1801/601
tag ctc ctg ccc cag tca tta gtt cct cag ctg cag aag cag ctg ttg cag cag cag
* L L P Q S S L V P Q L H K Q L L Q Q P
S S C P S H H * F L S C T S S C C S S R
A P A P V I I S S A A Q A A V A A A
1861/621
cag ctt cag caa atg gag cag ctg gtg gtc ttg ctg gaa caa atg gac cat ttc gcc
Q L Q Q M E Q L V V L L E Q Q M D H F A
S F S K W S S W W S C W N N K W T I S P
A S A N G A A G G L A G T T N G P F R P
1921/641
ctt tag gaa cac agc agc ctc agc ccc agc ccc agc agc cca ata aca acc tgg cat
L * E H S S L S P S P S S S P I T T W H
F R N T A A S A P A P A A A Q * Q P G I
L G T Q Q P Q P Q Q Q P N N L A S
1981/661
cca gtt ctt tct acg gca aca act ctc tga aca gca att cac aga gca gct ccc tct tct
P V L S T A T L * T A I H R A A P S S
Q F F L R Q Q L S E Q Q F T E Q L P L L
S S F Y G N N S L N S N S Q S S L F S

FIG. 18E

2041/681
ccc agg gct ctg ccc agg ctg cca aca cat cct tgg gat tgg gaa gta gca gtt ctc tgg
P R A L P S L P T H P W D S E V A V L S
P G L C P A C Q H I L G I R K * Q F S R
Q G S A Q P A N T S L G F G S S S L G
2101/701
gcg cca ccc tgg gat ccg ccc ttg gag ggt ttg gaa cag cag ttg caa act cca aca ctg
A P P W D P P L E G L E Q Q L Q T P T L
R H P G I R P W R V W N S S C K L Q H W
A T L G S A L G G F G T A V A N S N T G
2161/721
gca gtg gct ccc gcc gtg act ccc tga ctg gca gca gtg acc ttt ata aga gga cat cga
A V A P A V T P * L A A A V T F I R G H R
Q W L P P * L P D W Q Q * P L * E D I E
S G S R R D S L T G S S D L Y K R T S S
2221/741
gca gct tga ccc cca ttg gac aca gtt ttt ata acg gcc tta gct ttt cct ctc ctc
A A * P P L D T V F I T A L A F P P L L
Q L D P H W T Q F L * R P * L F L L S W
S L T P I G H S F Y N G L S F S S P G
2281/761
gac ccg tgg gca tgc ctc tcc cta gtc agg gac cag gac att cag aga cag ctc ctt
D P W A C L S L V R D Q D I H R H L L
T R G H A S P * S G T R T F T D T T S F
P V G M P L P S Q G P G H S Q T P P P S
2341/781
ccc tct ctt cac atg gat cct ctt caa got taa acc tgg gag gac tca cga atg gca gtg
P S L H M D P L Q A * T W E D S R M A V
P L F T W I L F K L K P G R T H E W Q W
L S S H G S S S L N L G G L T N G S G
2401/801
gaa gat aca tct ctg ctc cag gcg ctg aag cca agt acc gca gtg caa gca gcg cct
E D T S L L L Q A L K P S T A V Q A A P
K I H L C C S R R * S Q V P Q C K Q R L
R Y I S A A P G A E A K Y R S A S A S

FIG. 18F

2461/821
cca gcc tot tca gcc cga gca cta ttt tot ctt cct ctc gtt tgc gat atg gaa tgt
p a s s a r a a l f s l p l v c d m e c
q p l q p e q h s f l f l s f a i w n v
s l f s p s s t l f s s s r l r y g m s
2521/841
ctg atg tca tgc ctt ctg gca gga ggc ttt tgg aag att ttc gaa aca acc ggt acc
l m s c l l a g a g f w k i f e t t g t
* c h a f w q e q a f g r f s k q p v p
d v m p s g r s r l l e d f r n n r y p
2581/861
cca att tac aac tgc ggg aga ttg ctg gac ata taa tgg aat ttt ccc aag acc agc atg
p i y n c g r l l d i * w n f p k t s m
q f t t a g d c w t y n g i f p r p a w
n l q l r e i a g h i m e f s q d q h g
2641/881
ggt cca gat tca ttc agc tga aac tgg agc gtg cca cag ctg agc gcc agc ttg tct
g p d s f s * n w s v p h q l s a s l s
v q i h s a e t g a c h t s * a p a c l
s r f i q l k l e r a t p a e r q l v f
2701/901
tca atg aaa tcc agg ctg cct acc aac tca tgg tgg atg tgt ttg gta att acg tca
s m k s s r l p t n s w w m c l v i t s
q * n p p g c l p t h g g c v w * l r h
n e i l q a a y q l m v d v f g n y v i
2761/921
ttc aga agt tct ttg aat ttg gca gtc ttg aac aga agc tgg ctt tgg cag aac gga ttg
f r s s l n l a v l n r s w l w q n g f
s e v l * i w q s * t e a g f g r t d s
q k f f e f g s l e q k l a l a e r i r
2821/941
gag gcc acg tcc tgt cat tgg cac tac aga tgt atg gct gcc gtg tta tcc aga aag ctg
e a t s c h w h y r c m a a v l s r k l
r p r p v i g t t d v w l p c y p e s s
g h v l s l a l q m y g c r v i q k a l

FIG. 18G

2881/961
 ttg agt tta ttc ctt cag acc agc aga atg aga tgg ttc ggg aac tag atg gcc atg tot
 L S L F L Q T S R M R W F G N * M A M S
 * V Y S F R P A E * D G S G T R W P C L
 E F I P S D Q Q N E M V R E L D G H V L
 2911/971
 2941/981
 tga agt gtg tga aag atc aga atg gca atc acg tgg ttc aga aat gca ttg aat gtg tac
 * S V * K I R M A I T W F R N A L N V Y
 E V C E R S E W Q S R G S E M H * M C T
 K C V K D Q N G N H V V Q K C I E C V Q
 2971/991
 3001/1001
 agc ccc agt ctt tgc aat tta tca tog atg atg gac agg tat ttg cct tat cca
 S P S L C N L S S M R L R D R Y L P Y P
 A P V F A I Y H R C V * G T G I C L I H
 P Q S L Q F I I D A F K G Q V F A L S T
 3031/1011
 3061/1021
 cac atc ctt atg gct gcc gag tga ttc aga gaa tcc tgg agc act gtc tcc ctg acc aga
 H I L M A A E * F R E S W S T V S L T R
 T S L W L P S D S E N P G A L S P * P D
 H P Y G C R V I Q R I L E H C L P D Q T
 3091/1031
 3121/1041
 cac tcc cta ttt tag agg agc ttc acc agc aca cag agc agc agc agc agc agc agc agc agc
 H S L F * R S F T S T Q S S L Y R I N M
 T P Y F R G A S P A H R A A C T G S I W
 L P I L E E L H Q H T E Q L V Q D Q Y G
 3151/1051
 3181/1061
 gaa att atg taa tcc aac atg tac tgg agc acg gtc gtc ctg agc ata aaa gca aaa ttg
 E I M * S N M Y W S T V V L R I K A K L
 K L C N P T C T G A R S S * G * K Q N C
 N Y V I Q H V L E H G R P E D K S K I V
 3211/1071
 3241/1081
 tag cag aaa tcc gag gca atg tac ttg tat tga gtc agc aca aat ttg' caa gca atg ttg
 * Q K S E A M Y L Y * V S T N L Q A M L
 S R N P R Q C T C I E S A Q I C K Q C C
 A E I R G N V L V L S Q H K F A S N V V

FIG. 18H

3301/1101
 tgg aga agt gtg tta ctg acg cct cag gta cgg agc gcg ctg tgc tca tgg atg agg tgt
 W R S V L L T P H V R S A L C S S M R C
 G E V C Y S R L T Y G A R C A H R * G V
 E K C V T H A S R T E R A V L I D E V C

3331/1111
 3361/1121
 gca cca tga acg acg gtc ccc aca gtg cct tat aca cca tga agg acc agt atg cca
 A P * T T V P P T V P Y T P * * R T S M P
 H H E R R S P Q C L I H H D E G P V C Q
 T M N D G P H S A L Y T M M K D Q Y A N

3391/1131
 3421/1141
 act acg tgg tcc aga aga tga ttg acg tgg cgg agc cag gcc ago gga aga tgg tca tgc
 T T W S R R * L T W R S Q A S G R S S C
 L R G P E D D * R G G A R P A E D R H A
 Y V V Q K M I D V A E P G Q R K I V M H

3451/1151
 3481/1161
 ata aga tcc gcc ccc aca tgg caa ctg ttc gta agt aca cct atg gca ago aca ttc tgg
 I R S G P T S Q L F V S T P M A S T F W
 * D P A P H R N S S * V H L W Q A H S G
 K I R P H I A T L R K Y T Y G K H I L A

3511/1171
 3541/1181
 cca agc tgg aga agt act aca tga aga acg gtg ttg act tag gcc cca tct gtg gcc ccc
 P S W R S T T * R T V L T * G P S V A P
 Q A G E V L H E R C * L R A H L W P P
 K L E K Y Y M K N G V D L G P I C G P P

3571/1191
 3601/1201
 cta atg gta tca tct gag gca gtg tca ccc gct gtt ccc tca ttc ccg ctg acc tca ctg
 L M V S S E A V S P A V P S F P L T S L
 * W Y H L R Q C H P L F P H S R * P H W
 N G I I * G S V T R C S L I P A D L T G

3631/1211
 3661/1221
 gcc cac tgg caa atc caa cca gca acc aga aat gtt cta gtg tag agt ctg aga cgg gca
 A H W Q I Q P A T R N V L V * S L R R A
 P T G K S N Q Q P E M F * C R V * D G Q
 P L A N P T S N Q K C S S V E S E T G K

3691/1231

FIG. 181

3721/1241
 agt ggt tgc tcc agg att act ccc tcc tcc aaa gga atc aaa tcc acg agt gga aaa
 S G C S R I T P S S K K G I K S T S G K
 V V A P G L L P P P K K E S N P R V E K
 W L L Q D Y S L L Q K R N Q I H E W K S
 3751/1251
 3781/1261
 gcc ttt gta aat tta att tta tta cac ata aca tgt act att ttt ttt aat tga cta att
 A F V N L I L L L I T C T I F F L I D * L I
 P L * I * F Y Y T * H V L L F F L I D * L
 L C K F N F I T H N M Y Y F F * L T N C
 3811/1271
 3841/1281
 gcc ctg ctg ttt tac tgg tgt ata gga tao ttg tac ata ggt aac caa tgt aca tgg gag
 A L L F Y W C I G Y L Y I G N Q C T W E
 P C C F T G V * D T C T * V T N V H G R
 P A V L L V Y R I L V H R * P M Y M G G
 3871/1291
 3901/1301
 gcc aca tat ttt gtt cac tgt tgt ato tat att tca cat gtg gaa act ttc agg gtg gtt
 A T Y F V H C C I Y I S H V E T F R V V
 P H I L F T V V S I F H M W K L S G W L
 H I F C S L L Y L Y F T C G N F Q G G W
 3931/1311
 3961/1321
 ggt tta aca aaa aaa agc ttt aaa aaa aga aaa gga aaa ggt ttt tag ctg
 G L T K K K S F K K K R K K G K G F * L
 V * Q K K K A L K K K E K K E K V F S S
 F N K K K K L * K K K R K R F L A H
 3991/1331
 4021/1341
 att tgc ctg gcc ggc aag ttt tgc aaa tag ctg ttc ccc acc tcc tca ttt tag taa aaa
 I C L A G K F C K * L F P T S S F * K
 F A W P A S F A N S S S P P P H F S K K
 L P G R Q V L Q I A L P H L L I L V K N
 4051/1351
 4081/1361
 aca aac aaa aac aaa acc tga gaa gtt tga att gta gtt aaa tga, bcc caa act ggc
 T N K N K K T * E V * I V V K * P Q T G
 Q T K T K K P E K F E L * L N D P K L A
 K Q K Q K N L R S L N C S * M T P N W H

FIG. 18J

4141/1381
att taa cac tgt tta taa aaa ata tat ata tat ata tat aat gaa aaa ggt ttc
I * H C L * K I Y I Y I Y I Y I Y N E K G F
F N T V Y K K Y I Y I Y I Y I M K K V S
L T L F I K N I Y I Y I Y I * K R F Q
4201/1401
aga gtt gct aaa gct tca gtt tgt gac att aag ttt attg aaa ttc taa aaa atg cct ttt
R V A K A S V C D I K F M K F * K M P F
E L L K L Q F V T L S L * N S K K C L F
S C * S F S L * H * V Y E I L K N A F F
4261/1421
ttg gag act ata tta tgc tga aga agg ctg ttc gtg agg aga tgc gag cac cca gaa
L E T I L C * R R L F V R R C E H P E
W R L Y Y A E E G C S * G G D A S T Q N
G D Y I M L K K A V R E E M R A P R T
4321/1441
cgt ctt ttg agg ctg ggc ggg tgt gat tgt tta ctg cct act gga ttt ttt tct att aac
R L L R L G C D C L L P T G F S I N
V F * G W A G V I V Y C L L D F F L L T
S F E A G R V * L F T A Y W I F F Y * H
4381/1461
att gaa agg taa aat ctg att att tag cat gag aaa aat cca act ctg ctt ttg gtc
I E R * N L I I * H E K K N P T L L L V
L K G K I * L F S M R K K I Q L C F W S
* K V K S D Y L A * E K K S N S A F G L
4441/1481
ttg ctt cta taa ata tat agt gta tac ttg gtg tag act ttg cat ata tac aaa ttt gta
L L L * I Y S V Y L V * T L H I Y K F V
C F Y K Y I V Y T W C R L C I Y T N L *
A S I N I * C I L G V D F A Y I Q I C S
4501/1501
gta ttt tct tgt ttt gat gtc taa tct gta tct ata atg tac cct agt cga aca tac
V F S C F D V * S V S I M Y P S S R T Y
Y F L V L M S N L Y L * C F L V V E H T
I F L F * C L I C I Y N V P * S N I L

FIG. 18K

4561/1521
ttt tga ttg tac aat tgt aca ttt gta tac ctg taa tgt aaa tgt gga gaa gtt tga atc
F * L Y N C T F V Y L * C K C G E V * I
F D C T I V H L Y T C N V N V E K F E S
L I V Q L Y I C I P V M * M W R S L N Q
4621/1541
aac ata aag acg ttt ttt ggt aag aaa aga tta gaa ggc cct gtg cat tca gtg tat
N I N T F F G K K R E L A S P V H S V Y
T * T R F L V R K E N * P A L C I Q C I
H K H V F W * E K R I S Q P C A F S V Y
4681/1561
att ctc acc ttt tat ggt cgt agc ata tag tgt tgt ata ttg taa att gta att tca acc
I L T F Y G R S I * C C I L * I V I S T
F S P F M V V A Y S V V Y C K L * F Q P
S H L L W S * H I V L Y I V N C N F N Q
4741/1581
aga agt aaa ttt ttt tgt ttt gaa gga ata aat gtt ctt tat aca gcc tag tta atg ttt
R S K F F C F E G I N V L Y T A * L M F
E V N F F V L K E * M F F I Q P S * C L
K * I F L F * R N K C S L Y S L V N V *
4801/1601
aaa aag aaa ata gct tgg ttt tat ttg tca tct agt ctc aag tat agc gag att ctt
K K K I A W F Y L S S S L K Y S E I L
K R K K * L G F I C H L V S S I A R F F
K E K N S L V L F V I * S Q V * R D S F
4861/1621
tct aaa tgt tat tca aga ttg agt tct cac tag tgt ttt ttt aat cct aaa aaa gta atg
S K C Y S R L S S H * C F F N P K K V M
L N V I Q D * V L T S V F L I L K K * C
* M L F K I E F S L V F F * S * K S N V
4921/1641
ttt tga ttt tgt gac agt caa aag gac gtg caa aag tct agc ctt gcc cga gct ttc ctt
F * F C D S Q K D V Q K S S L A R A F L
F D F V T V K R T C K S L A L P E L S L
L I L * Q S K G R A K V * P C P S F P Y

FIG. 18L

4981/1661 5011/1671
aca atc aga gcc cct ctg acc ttg taa agt gtg aat cgc cct tcc ctt ttg tac aga aga
T I R A P L T L * S V N R P S L L Y R R
Q S E P L S P C K V * I A L P F C T E D
N Q S P S H L V K C E S P F P F V Q K M

5041/1681 5071/1691
tga act gta ttt tgc att ttg tct act tgt aag tga atg taa cat act gtc aat ttt cct
* T V F C I L S T C K * M * H T V N F P
E L Y F A F C L L V S E C N I L S I F L
N C I L H F V Y L * V N V T Y C Q F S L

5101/1701 5131/1711
tgt ttg aat ata gaa ttg taa cac tac acg gtg tac att tcc aga gcc ttg tgt ata ttt
C L N I E L * H Y T V Y I S R A L C I F
V * I * N C N T T R C T F P E P C V Y F
F E Y R I V T L H G V H F Q S L V Y I S

5161/1721 5191/1731
cca atg aac ttt ttt gca agc aca ctt gta acc ata tgt gta taa tta aca aac ctg tgt
P M N F F A S T L V T I C V * L T N L C
Q * T F L Q A H L * P Y V Y N * Q T C V
N E L F C K H T C N H M C I I N K P V Y

5221/1741 5251/1751
atg ctt atg cct ggg caa cta ttt ttt gta act ctt gtg tag att gtc tct aaa caa tgt
M L M P G Q L F F L * L L C R L S L N N V
C L C L G N Y F L * L L C R L S L N N V
A Y A W A T I F C N S C V D C L * T M C

5281/1761 5311/1771
gtg atc ttt att ttg aaa aat aca gaa ctt tgg aat ctg
V I F I L K N T E L W N L
* S L F * K I Q N F G I
D L Y F E K Y R T L E S

FIG. 18M

1/1
 CGA AGT TAA AGG GAA AAA GCA ATT CAC AGG AAA GAG TAC AAA GAC AGC ACA AGA AAA AAA
 G S A R F K A I H R K E Y K D S T R K K
 E V K G K K Q F T G K S T K T A Q E K N
 K I, K C K K S N S Q E R V Q R Q K K K T
 61/21
 CAG ATT TCA TAA AAA TAG TGA TTC TGG TTC TTC AAA GAC ATT TCC AAC AAG GAA AGT. TGC
 Q I S * K * * F F F F F K D I S N K E S C
 R F H K N S D S G S S K K T F P T R K V A
 D F I K I V I L V L Q R H F Q Q K L L
 121/41
 TAA AGA AGG TGG ACC TAA AGT CAC ATC TAG GAA CTT TGA GAA AAG TAT CAC AAA ACT TGG
 * R R W T * S S H I * E L * E K Y H K T W
 K F G G P K V T S R N F E K S I T K L G
 K K V D L K S H L G T L R K K V S Q N L G
 181/61
 GAA AAA GGG TGT AAA GCA GTT CAA GAA TAA GCA GCA AGG GGA CAA ATC ACC AAA GAA CAA
 E K G C K A V Q E * A A R G Q I T K E Q
 K K G V K Q F K N K Q Q G D K S P K N K
 K R V * S S R I S S K G T N H Q R T N
 241/81
 ATT CCA GCC AAA TAA ATT CAA CAA GAA GAG AAA ATT CCA GCC AGA TGG TAG AAG CGA
 I P A G K * I Q Q E E K F P A R W * K R
 F Q P A N K F N K K R K F Q P D G R S D
 S S R Q I N S T R R E N S S Q M V E A M

FIG. 19A

301/101 TGA ATC AGC AGC CAA GAA GCC CAA ATG GGA TGA CTT CAA AAA GAA GAA GAA ACT GAA
 * I S S Q E A Q M' G * L Q K E E E R T E
 E S A A K K P K W D D F K K K E L K
 H Q Q P R S P N G M T S K R R K N * S
 331/111
 361/121 GCA AAG CAG ACA ACT CAG TGA TAA AAC CAA CTA TGA CAT TGT TGT TCG GGC AAA GCA GAT
 A K Q T T Q * * N Q L * L * H C C S G K A D
 Q S R Q L S D K T N Y D I V V R A K Q M C
 K A D N S V I K P T M T L I F G Q S R C
 391/131
 421/141 GTG CGA GAT TTT AAG AAG AAA AGA CTG TGA CAA AGA AAA AAG AGT AAA GTT AAT GAG TGA
 V G D F K K K R L * Q R K K K R V K L M S D' I
 W E I L R R K D C D T K E K K E * S * * V I
 G R F * E E K T V T K K K E * S * * V I
 451/151
 481/161 TTT GCA GAA GTT GAT TCA AGC GAA AAT TAA AAC TAT TGC ATT TGC ACA CGA TTC AAC TCG
 F A E V D S R E N * N Y C I C T R F N S
 L Q K L I Q G K I K T I A F A H T I Q L V
 C R S * F K G K L K L L H L H T I Q L V
 511/171

FIG. 19B

541/181 571/191
 TGT GAT CCA CTC TTA CAT TCA GTA TGG TAA TGA ACA ACA GAG AAA ACA GGC TTT TGA AGA
 C D P V L H S V W * R T E K T G F * R
 V I Q C Y I Q Y G N E E Q R K Q A F E E N
 * S S V T F S M V M K N R E N R L L K N
 601/201 631/211
 ATT GCG AGA TGA TTT GGT TGA GTT AAG TAA AGC CAA ATA TTC GAG AAA TAT TGT TAA GAA
 I A R * F G * V K * S Q I F E K Y C * E
 L R D D L V E L S * V K A K A K Y S R N I L L R N
 C E M I W L S * V K P N I R E I L L R N
 661/221 691/231
 ATT TCT CAT GTA TGG AAG TAA ACC ACA GAT TGC AGA GAT AAT CAG AAG AAT TTT TAA AGG CCA
 I S H V W K * T T Q I A E I I R S F K G H
 P L M Y G S K P Q I L Q R * S E V L K A T
 P S C M E V N H R L Q R * S E V L K A T
 721/241 751/251
 CGT GAG GAA GAT CCT GCG GCA TGC TGC GGA AGC ATC AGC CAT CGT GGA GTA CGC ATA CAA TGA
 R E F D A A A C G S I S H R G V R I Q *
 V R K M L R H A E A S A I V E Y A Y N D
 * G R C C G H R K H Q P S W S T H T H T

FIG. 19C

781/261 811/271
 CAA AGC CAT TTT GGA GCA GAG GAA CAT GCT GAC GGA AGA GGT CTA TGG GAA CAC ATT TCA
 Q S H F G A E E H A D G R A L W E H I S
 K A I L E Q R N M L T E L Y G H T F Q
 K P Y W S R G T C * R K S S H G T H F S
 841/281 871/291
 GCT TTA CAA CTC AGC AGA TCA CCG AAC TCT GGA CAA AGT GTT AGA GGT ACA GCC AGA AAA
 A L Q V S R S A D H R T L D K V L E V Q P E K
 I T S Q Q I T E L W T K C * R Y S Q K N
 901/301 931/311
 ATT AGA ACT TAT TAT GGA TGA AAT GAA ACA GAT TCT AAC TCC AAT GGC CCA AAA GGA AGC
 I R T Y Y G * N E T Q I L T P M A Q K E A
 L E L I M D E M K * N R F * L Q W P K R K L
 * N L L W M K * N R F * L Q W P K R K L
 961/321 991/331
 TGT GAT TAA GCA CTC ATT GGT GCA TAA AGT ATT CTT GGA CTT TTT TAC CTA TGC ACC CCC
 C D * A L I G A * S I L G L F Y L C T P
 V I K H S L V H K V F L D F F T Y A P P
 * L S T H W C I K Y S W T F L P M H P P
 1021/341 1051/351
 CAA ACT CAG ATC AGA AAT GAT TGA AGC CAT CCG CGA AGC GGT GGT CTA CCT GGC ACA CAC
 Q T Q I R N D * S H P R S G G L P G T H
 K L R S E M I E A I R E A V V Y L A H T
 H S D Q K * L K P S A K R W S T W H T H

FIG. 19D

1081/361 1111/371
 ACA CGA TGG CCC CAG AGT GGC CAT GCA CTG CCT GTG GCA TGG CAC GCC CAA GGA CAG GAA
 T R W R Q S G H A L P V A W H A Q G Q E
 H D G A R V A M H C L W H G T P K D R K
 T H A P E W P C T A C G M A R P R T G K

1141/381 1171/391
 ACT GAT TGT GAA AAC AAT GAA GAC TTA TGT TGA AAA GGT GGC TAA TGG CCA ATA CTC CCA
 S D C E N N E D L C * K G * W P I L P
 V I V K T M K T Y V E K V A N G Q Y S H
 * L * K Q * R L M L K R W L M A N T P I

1201/401 1231/411
 TTT GGT TTT ACT GGC GGC AAT TGA TTG TAT TGA TGA TAC TAA GCT TGT GAA GCA GAT AAT
 F G P T G I * L Y * * Y * A C E A D N
 L V L L A A F D C I D D T K L V K Q I I
 W F Y W R H L I V L M I L S L * S R * S

1261/421 1291/431
 CAT ATC AGA AAT TAT CAG TTC ATT GCC TAG CAT AGT AAA TGA CAA ATA TGG AAG GAA GGT
 H I R N Y Q F I A * H S K * Q I W K E G
 I S E I I S S L P S I V N D K Y G R K V
 Y Q K L S V H C L A * M T N M E G R S

1321/441 1351/451
 CCT ATT GTA CTT ACT AAG CCC CAG AGA TCC TGC ACA TAC AGT ACG AGA AAT CAT TGA AGT
 P I V I L T K P Q R S C T Y S T R N H * S
 L I Y L L S P R D P A H T V R E I I E V
 Y C T Y * A P E I L H I Q Y E K S L K F

FIG. 19E

1381/461
 TCT CCA AAA AGG AGA TGG AAA TGC ACA CAG TAA GAA AGA TAC AGA GGT CCG CAG ACG GGA
 S A K R R R W K C T Q * E R Y R G P Q T G
 L Q K G D G N A H S K K D T E V R R R E
 C K K E M E M H T V R K I Q R S A D G S
 1441/481
 GGT CCT AGA ATC CAT TTC TCC AGC TTT GTT AAG CTA CCT GCA AGA ACA CGC CCA AGA AGT
 A P R I H I S P A L L C * A T C K N T P K K W
 L L K S I S P A L L C * A T C K N T P K K W
 S * N P P F L Q L C * A T C K N T P K K W
 1501/501
 GGT GCT AGA TAA GTC TGC GTG TGT GTT GGT GTC TGA CAT TCT GGG ATC TGC CAC TGG AGA
 G A R * V C V C V L V S D I L G S A T G D
 V L D K S L R V C W C L T F W D L P L E T
 C * I S L R V C W C L T F W D L P L E T
 1561/521
 CCT TCA GCC TAC CAT GAA TGC CAT CGC CAG CTT GGC AGC AAC AGG ACT GCA TCC TGG TGG
 R S A Y H C H R Q L G S N R T A S W W
 V Q P T H N A I A S L A A T G L H P G G
 F S L P * M P S P A W Q Q Q D C I L V A

FIG. 19F

FIG. 19C

1921/641
TCT ACT TGA AAA ACT GAG CAC ATA GGT GGA AAG AGT TAA GAG CAA GAT GGA ATG ATT TTT
S T * K T E H I G G K S * E Q D G M I F
L L E K L S T * V E R V K S K M E * F F
Y L K K N * A H R W K E L R A R W N D F F
1981/661
TCT GTP CTC TGT TCT GTT TCC CAA TGC AGA AAA GAA GGG GTA GGG TCC ACC ATA CTG GTA
S V I C S V S Q C R K E G V G S T I L V
L P S V L F P N A E K K G * G P P Y W *
C S L F C F P M Q K R R G R V H T G N
2041/681
ATT GGG GTA CTC TGT ATA TGT GTT TCT TCT TAT ACG AAT CTA TTT ATA TAA ATT GTT
I G V L C I C V S S L Y T N L F I * I V
L G Y S V Y V F L L C I R I Y L Y K L F
W G T L Y M C F F F V Y E S I Y I N C F
2101/701
TTT TTA AAT GGT
P I N G
P * M
P K W

FIG. 19H

1 1 GGATCCCTCTGTGAGGCCGATT ATG CAG GCC TAG ACCGCACGTGACCA CTTCGAGAGCAAGTTGGCTCGGAGTTTCTCTGCCCGAGAAAAGA 95
1 4
96 A ATG GAG GCA AATT TAC TTA ATA TGG TAT GAG AGG ATC TTT TGA CGGCAATAG ATG CGC CAT CTC CGA GAA AAA ATC 172
1 8
173 TAG ACAATAACAGCGACAATTAACCTAAAGAGGATAGAAGATCGAGCAAAAAAATTTTAAAT ATG GGG TCA GTG GCG ATA TTA TAC TAT 262
9 9
263 AGG AGT TAA AGAGTAAGTTGAGTGTAGTGAATTT ATG AATT GAA CTC CGA AAC TAA GCGCCGATT ATG GGT GGC AAA GCG 346
10 5
347 GAC AGC TTTT TGA TATATAATCGATCGCTCTCGTAGTTGATATCCCTCTCTTGCTTATCTTTTCTGTATATAGTAT ATG TGT ACA TAC 435
6 4
436 AGA TAC GAA TAT ACC TCA GTT AGT TTG TTT TAA CATTAAATATTCAACAGTTGCCAGTAGCAAAAAGATATATCCATTTTCGAGC 524
5 15
525 TTTTTCGTCTCATTTACTGATATCCAACTTAACAGTCTCTCATAGACGGTACCTTACTTTTCCCTTAAATATAAATACTAGTATAGTCGCACATACTTAAC 624
625 TCGTCTCTCTTAACACATA ATG AAA AAT TCC GCA GCT TTA ATA TTG TCT TCT TCT TCT GTC GCA TTT TCT GCC CCT 704
1 20
705 GCA CCT GCT CCA GCG GAC AGT CAT CAT GAA GAT CAT CAC AAA GAA AAA CCA GCG GTT GTC ACT GTC ACT CAA 779
21 45
780 TAC ATA GAT TCC AAT GCC GCT ACT AGT ACT GTA GAA TCT GCT GCT ACT ACC ACT ACA TTG TCC TCA TCT GAG AAG 845
46 70
855 GAT ACC TCT GAA CAG AAG CGT GAT GGC GGA TTC CAA GAT GGT ACT GTC AAA TGT TCG GAC TTC CCT TCT GTA AAC 929
71 95
930 GGT ATA GTT TCC TTG GAC TGG CTA GGA TTT GGT GGA TGG GCC TCT GTC ATG GAC ATG GAT GCC AAC ACT TCG TCC 1004
96 120
1005 GAA TGT AAG GAT GGC TAC TAC TGT TCT TAT GCA TGT GAA CCT GGA ATG TCA AAG ACT CAA TGG CCT TCT GAC CAA 1079
121 1456
1080 CCA AGC GAT GGT AAA TCT GTT GGT GGT CTT TAT TGT AAA AAT GGT TAC TTG TAC CGT ACC AAC ACT GAT ACC AGC 1154
146 170
1155 GAT TTA TGT TCT ACG GAT GAA ACA TCT GCT AAG GCC ATT AAC AAA AAG TCT GAC TCC ATT GCT CTA TGT AGG ACG 1229
171 195
1230 GAT TAC CCA GGA TCT GAA AAC ATG GTG ATT CCC ACA GTG GTT GAT GGT GGA GAT TCA CAA CCA ATT TCA GTC GTT 1304
196 220

FIG. 20A

1305 221 GAT GAA GAC ACT TAT TAT CAA TGG CAG GGT AAA AAG ACT TCT GCT CAG TAC TAT ATT AAC AAC GCC GGT GTA TCT 1379
245
1380 246 GCA GAA GAT GGG TGC ATT TGG GGT ACT TCT GGT TCG GAT GTC GGC AAC TGG GCT CCA CTA GTG TTA GGT GCT GGT 1454
270
1455 271 TCC ACT AAT GGA GAA ACA TAC TTG TCG TTG ATT CCA AAC CCC AAC AGT AAC CAA GCT GCC AAC TTT AAC GTT AAA 1529
295
1530 296 ATA GTT GCA TCC GAT GGC GCT AAC GGT CAG GGC AGC TGT GCG TAT GAA GAT GGC TCT TTC ACC GGA GAT GGT TCC 1604
320
1605 321 GAT GGT TGC ACA GTT TCT TTA TCT GGA TCT GGT GAA TTT GGT TTC TAT TAA GTCACTCTCTTTTCGGTAAAGA ATG 1685
1686 2 TCT TGT ATT TTG ATA CCC TCA ATT CCC CTT ATT ATT CTT TTT CTT CCG CTC TCT ATT TAT TAT TAT ACA TTG GGA 1760
26
1761 27 TTC CGT TAT ATT TTT CTC CTT TCA GTT CAT TTT ACT TCT TAA AAAAGTTTCGTTGATCGCTATT ATG CTA TGG ATT CAA 1838
5
1839 6 AGA TTT TCT TTT CTC TCT CTT CAA GGT GTA CTC TGC ATT ACG GTT TTC TTT AGT TCG TTT ATT TTT TTT TTG TTA 1913
30
1914 31 ACA AGG TGT TTG TAT ACA TAT ATA TAA ATAT ATG GAA ATA TTA TAG TGTATTATTTTGTACTTCTTCGAGTTGCAACAGAACTA 1998
5
1999 1 ACAAG ATG CCA TGC TGT TTT TTT TCA TTT TTT GGC TAT AAA AAT AAC AGT ATC CTA GTC CTT GTG TTC GGC TTT 2072
23
2073 24 AAA ATG GAA TTG CAA ACC CCA TAA TTCCTTCTTTCACACCCGAACAAACCGCCTAGTAGTCGATTTTCAGAGACTCTA ATG CTT TGA ATA 2160
3
2161 1 TAATTTTTCCTCAAAAATTCCTTAAGCGTGCTATCGA ATG AGT AGA CAT CAA TCA AGA GTT TCA TGG TCT CCC CGT ATT TGC 2245
15
2246 16 CGC TGC TTC TAA TATTTTGGAGTGTAGCATAGCCCAATCAATCAATCTTCGATA ATG CCA CTT TTT ACA TAT ACA CGA CGA CAA 2331
10
2332 11 CCC ACA GTA ACA CTC ATG ACT AAA TTT TCA TCA GTA CTT AAT GTG ATG TAA GGG GCT AAC GAA ATC AAT GCA 2406
35
2407 36 ATG GGC GTT TCT CTA TAA ACG ATG ATA TGC GTA TTG TTC ACC ACT GGA TCC 2457
10

FIG. 20B

FIG. 21A

1265	ATT TCT ATT GAC TGG ATT GGC GAG GGT GGA TGG TCC GGT GTG GAA AAC ACC GAC ACT TCC ACT GGC GGT TCA TGC	1339
235	I S I D W I G E G G W S G V E N T T D T S T G G C	259
1340	AAG GAG GGG TCC TAC TGT TCC TAC TCC TGC CAA CCA GGT ATG TCT AAG ACC CAA TGG CCA TCC GAT CAA CCA TCT	1414
260	K E G S Y C S Y S C Q P G M S K T Q W P S D Q P S	284
1415	GAC GGT AGA TCT GTC GGG GGT TTT TTT TGT AAA AAT GGT TAT TTG TAC CGT TCT AAC ACT GAC GCG GAT TAC TTA	1489
285	D G R S V G G L L C K N G Y L Y R S N T D A D Y L	309
1490	TGT GAA TGG GGT GTC GAG GCT GCC TAT GTT GTT TCT AAA CTA AGC AAG GGT GTC GCC ATT TGC AGA ACC GAC TAC	1564
310	C E W G V E A Y V V S K L S K G V A I C R T D Y	334
1565	CCG GGC ACT GAA AAC ATG GTT ATC CCA ACC TAT GTT GAA GGG GGT AGC TCT TTG CCA TTG ACC GTT GTT GAC CAA	1639
335	P G T E N M V I P T Y V E G S S L P L T V D Q	359
1640	GAT ACT TAC TTT ACT TGG GAA GGC AAA AAG ACA TCT GCT CAA TAC TAC GTT AAT AAC GCC GGC GTC TCA GTT GAA	1714
360	D T Y F T W E G K K A Q Y Y V N N A G G G V S V E	384
1715	GAT GGG TGT ATC TGG GGT ACT TCT GGA TCT TCT GGT ATT GGT AAC TGA CCA TTA AAC TTT GGT GGT TCC ACT	1789
385	D G C I W G T S G S G I G N W A P L N F G A G S T	409
1790	GGT GGA GTG ACA TAC TTA TCA TTG ATT CCT AAC CCA AAC AAC AGC GAC GCA TTG AAC TAC AAC GTC AAG ATA GTT	1864
410	G V T Y L S L I P N N S D A L N Y N V K I V	434
1865	GCT GCT GAT TCA TCC AAT GTC ATC GGT GAA TGT GTT TAC GAA AAT GGT GAG TTC TCT GGC GGT GCT GAC GGG	1939
435	A A D S S N V I G E C V Y E N G E F S G A D G	459
1940	TGT ACC GTC TCT GTT ACT TCC GGT AAA GCT CAT TTC GTC TTA TAC AAT TAA GCTACGTGACTACTTTTCTTTT	2022
460	C T V S V T S G K A H F V L Y N *	476
2023	CTTTTTCGAACACATCTCACCCCTTATACCTCACACATCACT ATG GTC CCC TTT TCT TCT TTT TAC CGA TAT TTA TAC TGT CCA CCT	2108
1	M V P F S F S F Y R Y L Y C P P	14
2109	TTT TCT TTT CGT TAA TGGCTCA ATG TTT CTG TAC CAT TAT C	2150
15	F S F R * M F L Y H Y	6

FIG. 21B

FIG. 22A

FIG. 22B

Pile.1 (Nca3)	251	.....	.....SDFPSV	NGIVSLDWLG	FGWASVMDM	DANTSSECKD	300
Pile.1 (Uth1)		.....	.....SDFPSG	QGAVSLDWLG	I.GWASIMDM	NGNTATSCQD	
Pile.1 (Sag1)		SATKSSSTSTST	SPSTSTSTST	SSTSSSSSSS	SSSSSSSSNT	DTSTGGSCKE	
Consensus		-----	-----S-	-----S-	-----S-	-----T-C-	
Pile.1 (Nca3)	301	GYCYCYACCP	GMSKTQWPSD	QPSDGKSVGG	LYCKNGLYR	TNTDTSDLCS	350
Pile.1 (Uth1)		GYCYCYACSP	GYAKTQWPSL	QPSDGRSVGG	LYCKNGKLYR	SNTD'TNSLCV	
Pile.1 (Sag1)		GSYCSYSCQP	GMSKTQWPSD	QPSDGRSVGG	LLCKNGLYR	SNTDADYCLE	
Consensus		G-YCSY-C-P	G--KTQWPS-	QPSDG-SVGG	L-CKNG-LYR	-NTD----LC-	
Pile.1 (Nca3)	351	TDETSAKAIN	KKSDSIALCR	TDYPGSENMV	IPTVVDGSDS	QPISVVDEDT	400
Pile.1 (Uth1)		EGOGSAOAVN	KVSGSIAICG	TDYPGSENMV	VPTVVGAGSS	QP INVIKEDS	
Pile.1 (Sag1)		WGVAAAYVVS	KLKSGVAICR	TDYPGTENMV	IPTYVEGGSS	LPITVVDODT	
Consensus		-----A-----	K-S---A-C-	TDYPG-ENMV	-PT-V--G-S	-P--V---D-	
Pile.1 (Nca3)	401	YYQWQGGKKT'S	AQYYINNAGV	SAEDGCIWGT	SGSDVGNWAP	LVI.GAGSTNG	450
Pile.1 (Uth1)		YYQWQGGKKT'S	AQYYVNNAGV	SVEDGCIWGT	EGSGVGNWAP	VVLGAGYTDG	
Pile.1 (Sag1)		YPTWEGKKT'S	AQYYVNNPGV	SVEDGCIWGT	SGSGIGNWAP	LNFGAAS'TGG	
Consensus		Y--W-GKK'T'S	AQYY-NN-GV	S-EDGCIWGT	-GS--GNWAP	---GA--T-G	

FIG. 22B

Pile.1 (Nca3)	451	ETYL	SLIPNP	NSNQANFNV	KIVASDG.AN	VQGS	CAYEDG	500
Pile.1 (Uth1)		ETYL	SLIPNP	NNKEAPNFI	KIVA'DG.SI	VNGACS	YENG	SDGC
Pile.1 (Sag1)		VTYL	SLIPNP	NNSDALNYNV	KIVAADDSSN	VIGECV	YENG	SDGC
Consensus		-TYLS-	IPNP	N--A-N-N-	KIVA-D---	V-G-C-YE-	G	SDGC
Sun4		...	SLIPNP	NNGNALNFNV	KIVAADDSSST	VNGECI	YENG	SDGC
Pile.1 (Nca3)	501	TVSV	VLGSAE	515				
Pile.1 (Uth1)		TVSV	VTSGSAN	FVFYZ				
Pile.1 (Sag1)		TVSV	VTSGKAI	FVLIN				
Consensus		TVSV	-SG-A-	FV-Y-				
Sun4		TVSV	TAGKAK	FVLY.				

FIG. 22C

EIGHT REPEATS IN UTH4

193	L	a	t	D	q	F	G	c	r	F	L	Q	K	k	L	E
231	L	i	l	D	p	F	G	n	y	L	V	d	K	i	c	D
267	I	s	i	n	q	Y	G	t	r	s	L	Q	K	i	I	D
310	L	i	n	D	I	n	G	n	h	V	I	Q	K	c	I	f
348	I	s	t	H	k	h	G	c	c	V	L	Q	K	i	L	s
384	L	i	n	D	q	F	G	n	y	I	I	Q	f	i	L	D
422	L	s	c	l	k	F	s	s	n	V	V	e	K	f	I	K
487	L	i	r	D	n	F	G	n	y	A	L	Q	t	i	L	D



HYDROPHOBIC



CHARGED

FIG. 23

UTH4	LatDqFGCRFLQKkLE	
YGL023	LckDqHGCRFLQKqLD	
PUMILIO	FsqDqHGSRFIQQkLE	1
HUMAN	FsqDqHGSRFIQLkLE	
	LilDpFGNYLIQKiCD	
	LmtDsFGNYLIQKiLE	
	LmtDvFGNYVIQKfFE	2
	LmrDvFGNYVIQKfFE	
	IsiNqYGTRSLQKiID	
	IslNpHGTRALQKiIE	
	LalQmYGLRVIQKqLE	3
	LalQmYGLRVIQKqLE	
	LinDlNGNHVIQKcIF	
	LskDlNGNHVIQKcLQ	
	CvkDqNGNHVVQKcIE	4
	CvkDqNGNHVVQKcIE	
	IstHkHGCCVLQKiLS	
	IatHrHGCCVLQRcLD	
	LstHpYGCRVIQRiLE	5
	LstHpYGCRVIQRiLE	
	LinDqFGNYIIQFiLD	
	LtlDpFGNYVVQYiIT	
	LiqDqYGNyVIQHvLE	6
	LvqDqYGNyVIQHvLE	
	LscIkFSSNVVEKfIK	
	LsiHkFGSNVIEKiIK	
	LsqHkFASNVVEKcVT	7
	VlsQhFASNVVEKcVT	
	LirDnFGNYALQTiLD	
	LlnDsYGNyVLQTqLD	
	MmkDqYANYVVQKmID	8
	MmkDqYANYVVQKmID	

FIG. 24